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REPORT  
OF THE  
FOREST PARK RESERVATION COMMISSION  
OF  
NEW JERSEY  
1912

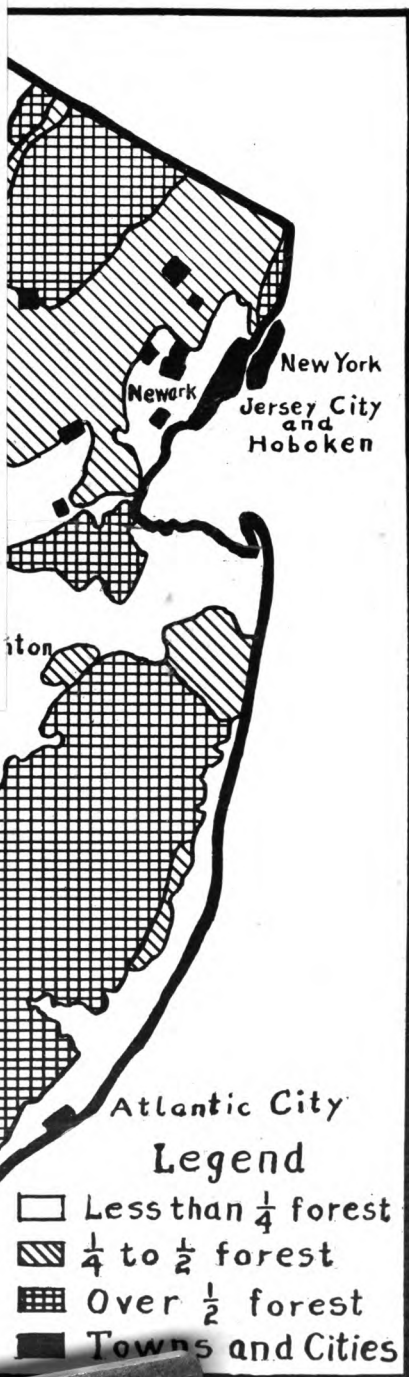
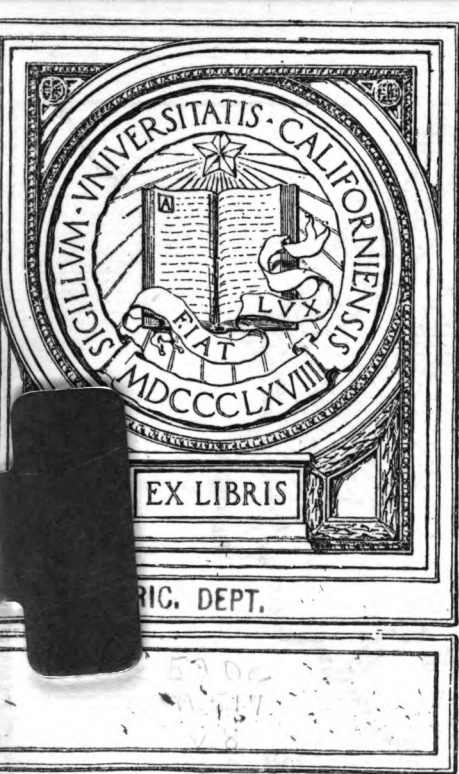


Fig. 1. New Jersey's Forest Woods. 42 per cent. of the State



REPORTS OF  
THE FOREST PARK RESERVATION COMMISSION  
OF NEW JERSEY

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EIGHTH ANNUAL REPORT

For the Year ending October 31st

1912



UNION HILL, N. J.  
DISPATCH PRINTING COMPANY

1913



SD 12  
N5  
1917/12

## The Forest Park Reservation Commission.

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Hon. WOODROW WILSON, GOVERNOR, *ex-officio President.*

HENRY B. KÜMMEL, STATE GEOLOGIST, Trenton, *Executive Officer.*

ELMER H. SMITH, Salem.

CHARLES L. PACK, Lakewood.

WILLIAM W. SMALLEY, Bound Brook.

---

ALFRED GASKILL, Trenton, *Forester and Secretary.*

JAMES O. HAZARD, Trenton, *Assistant Forester.*

CHARLES P. WILBER, Trenton, *State Firewarden.*

OFFICE, State House, Trenton.

---

AGRIC. DEPT.

### DIVISION FIREWARDENS.

Div. A—WILLIAM LINDSAY, Dover.

Div. B—FREDERIC C. TORREY, Lakehurst.

Div. C—JOSEPH E. ABBOTT, Hammononton.

Div. D—LEONIDAS COYLE, Millville.

## Letter of Transmittal.

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*To His Excellency, Woodrow Wilson, Governor of the State of  
New Jersey and ex-officio President of the State Board of  
Forest Park Reservation Commissioners:*

SIR—I have the honor to submit the annual report of the Forest Commission for the year ending October 31st, 1912, as required by law. The control of forest fires continues to be our greatest problem, though marked progress has been made. The work of the Commission in practical forestry and on behalf of the shade trees apparently meets with public approval. The thirteen pages of illustrations accompanying the report are necessary to a proper understanding of our work.

Respectfully yours,

HENRY B. KÜMMEL,  
*Executive Officer.*

ALFRED GASKILL,  
*Secretary.*

**338636**

(3)

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# Report of the Forest Commission.

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## SUMMARY.

Forestry applied in practical ways—The people approve—Forest fires much less serious—Forestry must be practiced by forest owners if by anyone—State reserves beginning to yield some revenue—Much activity on behalf of shade trees—Legislation and appropriations adequate—Financial Statement—Organization.

In publishing its eighth annual report the Forest Commission records with much satisfaction a very material improvement in the condition of the forests of the State and an increasing interest in forestry and arboriculture. Much of the interest is undoubtedly a part of the nation-wide extension of the conservation idea: it apparently is true, however, that the Commission's efforts have made forest property more secure and more valuable than it was, that the shade trees in cities and towns are better cared for. The matters that have engaged the Commission's attention are presented in some detail in the reports of the State Forester and State Firewarden which are printed herewith. A summary of them follows:

## GENERAL POLICY.

The constant aim of the Commission is to solve in a practical way the problems presented. Conditions in this State are unlike those in most others. We have two million acres of woodland, yet little of it is either good forest yielding lumber or devastated barrens. Good soil, good climate and a sufficient remainder of the old stand make it possible to establish fairly good commercial forests anywhere *without planting—provided fires are stopped*. See Figs. 6, 7, 8, 14. The first concern, therefore, has been, and is, to organize an effective fire service. The second is to get forest owners to practice forestry. There are plenty of arguments in support of

State forestry, the difficulty is to get the forests. Therefore, since the State owns but a small portion of the woodland within its borders, private owners, not the State, must do most of the forestry. The third line of effort is to make the State forest reserves as valuable, in themselves and as demonstrations, as is possible; and the fourth to get more and better shade trees.

#### PUBLIC APPROVAL.

The Commission feels justified in calling attention to the generous measure of approval that is accorded its efforts, by those who watch from a distance as well as by those who are immediately concerned.

At home the last remnant of opposition to the Commission's policy with respect to forest fires has given place to constant demands for a strict enforcement of the laws. The effort to interest forest owners in the practice of forestry by giving security and value to their properties is steadily gaining support. The work that is done for shade trees satisfies a large number of urban citizens and makes the Commission and its activities widely known. In other States, New Jersey's laws and policy are frequently endorsed by imitation.

But in many ways the Commission's work is little more than begun. The fire habit is checked, not broken. Now comes the task of enriching the State by establishing good forests where poor forests, or none, have been, and providing for their highest utilization. The effort is educational and will proceed slowly, for in this direction the Commission can compel no one.

#### TRAFFIC IN WILD LAND.

A subject that has engaged the Commission's attention, though not strictly within its province, is the exploitation of land in forested sections by unscrupulous promoters. On account of its proximity to New York and Philadelphia, New Jersey has always been a fertile field for this sort of thing. The worst offenders are those who seek to sell building lots in "towns" whose existence is evidenced solely by a plot map and by "streets" cut through the brush. The statement that the "streets are opened" seems to satisfy those who think to inquire about improvements, and a railroad within



a mile or two gives an impression of conveniences that is apt to be illusory. Less objectional are the schemes for exploiting small farms. Some valuable pioneering has unquestionably been done, and is being done, in this way, though in numerous instances the facts are greatly distorted and innocent people misled.

Many of these projects are hard to deal with because no law is violated. The land is shown—often free excursions are run to it, and a valid deed is given; but improvements are promised, not made, and the ignorant foreigners who are the majority of victims know nothing of the conditions which attach to such situations, whether “town” or “farm.” The worst feature, of course, is that the prices demanded are usually at least ten times as much as the land is worth. To one accustomed to city values a town lot is cheap at twenty dollars, and a farm at only fifty dollars an acre looks easy to one who in the old country has had to pay that much each year as rent. Discontent and discouragement are apt to enter when it is realized that land as good can be bought nearby at its market value and that the payments made, and many yet to be made, are money thrown away.

The town lot schemes have another bad side, for when they fail, as most do, the property is actually of less value than it was before, because the divided ownership and clouded titles that result make it unavailable for legitimate development.

In respect to agriculture New Jersey offers opportunities that need only to be known. The State has plenty of good farm land unoccupied that can be bought at low prices. In co-operation with the Board of Agriculture plans are making to inform prospective buyers of its location and value. The Forest Commission is impelled to refer to these schemes because the abuses deal largely with land that is now forested.

#### THE FOREST FIRE SERVICE.

Forest fires, that for years ravaged the State, are steadily becoming less serious. This statement is not born of hope, nor is it based upon the record of a single favorable season. The year for which this report is made gave almost as great opportunity for disastrous fires as any of the three years preceding. As the State Firewarden's report amply shows forest fires in this State are now affairs of minutes, or at most hours, whereas they often

used to burn for days. And the serious fires are concentrated in dry periods when everything goes so quickly that even vigilant wardens cannot always be in time. How efficient the present forest fire service is may be gathered from the following statements:

**Loss**—The number of fires which burned five acres or more was reduced from 289 in 1911 to 214 in 1912, while of the last only fifty-one covered over 100 acres and only three over 1,000 acres. The total area burned in 1912 was 26,291 acres against 64,404 acres in 1911. The total loss in 1912 was \$21,501. The loss in 1911 was \$86,940. Comparisons with earlier years are made in Table I, p. 16.

**CAUSES**—In respect to origin, the proportion of fires for which no definite cause can be assigned has been reduced from about fifty per cent. to twenty-six per cent. This means efficient wardens, for an invariable sign of a weak organization is a large proportion of "cause unknown" fires. Fires from brush burning were reduced to thirty-eight, only seven per cent. of the total, though 4,100 permits were issued. Last year there were sixty-five fires from burning brush. It is significant that as the consequences of many brush burnings are made apparent and emphasized by penalties enforced, people find that brush fires need not be made at all. The railroads continue to be the chief source of forest fires. Yet this statement can be made as information rather than complaint since all the more important roads are working earnestly to lessen the hazard that their trains inevitably create. Though 295 fires were started, the firewardens and railroad men were so vigilant that only 25 of them burned as much as fifty acres.

**RAILROAD FIRE LINE LAW**—The Commission deeply regrets that this law, 2 Comp. Stat. p. 2,339, under which so much has been done to guard the forests against fire from the railroads, has been declared unconstitutional by the Court of Chancery. An appeal has been taken to the Court of Errors and it is hoped that the decision may be reversed. The value of these fire lines to the railroads, as well as to property owners, is indicated by the instructions issued by superintendents in the Pennsylvania Railroad System. See p. 53.

**VIOLATIONS OF LAW**—The Commission stands firmly by its policy of enforcing the law vigorously and impartially. In all 252 violations were established, these being forty-two per cent. of all fires reported, little and big. Though most of these violations were unintentional, penalties have been imposed in 105 cases; 33 of them being against individuals and 72 against railroads. One hundred and twenty cases against railroads and nine cases against individuals are still pending. Eighteen cases have been dropped for lack of conclusive evidence. The sum of \$1,312.19\* was recovered as penalties, of which \$1,115.49 was paid to the treasurers of the townships concerned, the balance going to the State.

**FEDERAL CO-OPERATION**—Not the least important and valuable aid that the fire service enjoys is that furnished by the United States Government. The \$2,000 allotted to this State from the appropriation made by Congress to execute the "Weeks Law" made it possible to maintain a patrol in North Jersey which extinguished an average of eighteen fires a month during the spring and summer. In July thirty-five fires were put out. The order of the Postmaster General by which 55,000 rural mail carriers are made auxiliary firewardens in States having an organized fire service was originally proposed by the State Firewarden of New Jersey. The rural carriers now serving as patrolmen in this State under that order number about 300.

#### PRIVATE FORESTRY.

New Jersey is fortunate in having a large number of property owners who want to improve their woodlands. Many are concerned chiefly, or solely, with landscape effects, yet an increasing number are considering the profit in timber growing. These the Commission tries to help, upon the ground that a properly managed forest is a public benefit no matter who pays the taxes on it. Thirteen such properties, having an area of 1,600 acres, have been added this year to the total of those upon which forestry looking to the utilization of one timber crop and the production of another is practiced.

On some of these properties as many as 40,000 young trees were planted. The Commission is always ready to encourage and aid such work, though so little land in the State needs to be planted that it requires no emphasis.

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\*See Foot Note, p. 27.

## WOOD UTILIZATION.

Along with the production of wood goes its proper utilization. As a means of knowing what the State uses and what it needs a special study of its wood-using industries is being made in co-operation with the United States Forest Service. A report on this will be published next year.

## FOREST RESERVES.

The State reserves aggregate 13,720 acres and the effort to increase them has been suspended in order that all the money available may be devoted to protecting the whole body of woodland without reference to ownership. The properties all are increasing in value as the forests develop in response to immunity from fire. See Fig. 6. They prove beyond question that fire is the chief bane of New Jersey's forests and that reasonably good timber lands can be obtained solely through protection. See Figs. 7, 8.

None of the larger reserves is yet in condition to yield any considerable revenue. That they can and will do so is clearly indicated by the growth of the trees and by what was done on Mount Laurel last winter. In brief, the twenty acres there produced timber which when sold *netted* nearly \$300, yet left a better forest than was found. (See Figs. 16, 17, 18). A special bulletin describing what was done has been published as "*A Practical Example of Woodlot Forestry.*" The Commission hopes to acquire other woodlots upon which to make similar demonstrations.

The total income from all the reserves was \$508.57—an insignificant sum except that it indicates the Commission's purpose to make the State lands yield all they can.

The recent action of the State Water Supply Commission in contracting to purchase the Wharton tract in Burlington and Atlantic counties for the water found on it will bring under State control an area of forest aggregating close to 100,000 acres. Though no active work can be done on this property until title shall have passed, the Forest Commission stands ready to co-operate with the Water Supply Commission for its fullest development.



**Fig. 2. Fire-Resistant Pitch Pine with a Reserve Poster.**



**Fig. 3. A Reserve Boundary Cleared to Serve Also as a Fire Line.**





## SHADE TREES.

There are now 41 active Shade Tree Commissions in the State having combined appropriations of \$85,000. Nine of these were appointed during the current year. Thus is indicated the importance and wide extension of the shade tree propaganda. It clearly demonstrates that a Shade Tree Commission combines the interest, enthusiasm and authority necessary to accomplish results in any community. Certain defects in the laws have developed as one of the results of all this activity. The legislation necessary to remedy them can doubtless be secured without difficulty. The Shade Tree Book published by the Commission has been of value alike to Shade Tree Commissions and to individual tree owners.

A beginning has been made also towards providing shade trees for country roads. By the law passed last spring the State Commissioner of Public Roads is authorized to require that State-aid roads shall be tree bordered. Specifications covering the choice, planting and care of trees in such cases have been prepared by the State Forester, who will co-operate with the Road Commissioner. It is expected that a beginning in this important work will be made next spring.

The Forest Commission aims to keep in touch with all shade tree interests and is always ready to lend a hand to those who need help. See p. 71.

## LEGISLATION AND APPROPRIATIONS.

The forestry laws are proving in most respects entirely adequate. As the fire record shows it is possible to enforce the observance of reasonable regulations. No new legislation in this line was sought this year and there is, apparently, no need to ask any of the next legislature. In general forestry the situation is the same except that a law was enacted at the instance of many users of the northern lakes by which an exemption of taxes on water bodies can be secured when they are made free to the public. The practical value of this statute is yet to be proven.

In respect to shade trees it is apparent that the laws need to be simplified and so modified that a community can better control its own shade tree work, and shall not be limited, as it now is, in the amount that may be appropriated for such purposes. The Forest

Commission will co-operate actively with the shade tree interests that have this matter in charge.

The appropriations made for the year 1912,—\$9,200, for salaries, traveling expenses, care of the reserves, shade tree work, etc., and \$15,000 for forest fires, have also been sufficient. In fact, it was possible to return to the Treasury an unexpended balance of \$1,700 on the fire account and to pay in nearly \$600 received for products sold and for recovered fire expenses. The exact total of all expenditures cannot be given because the accounts with many townships are never fully settled, while numerous pending cases are subject to a varied disposition. Approximately the net expenditure for the year, by State and townships, is:

#### BY THE STATE.

##### *For Administration, Care of Reserves, Education, Etc.*

Appropriation .....	\$ 9,200	
Less expenses and income refunded .....	580	
		<u>\$ 8,620</u>

##### *For the Forest Fire Service.*

Appropriation .....	\$15,000	
Less refund .....	1,700	
		<u>\$13,300</u>

#### BY THE TOWNSHIPS.

For Firewardens' salaries and expenses .....	\$ 3,176	
Less penalties refunded .....	1,421	
		<u>\$ 1,755</u>
Total .....		<u>\$23,675</u>

For the year 1913 the appropriations already made are \$15,000 for forest fires and \$10,500 for forestry. It is the aim of the Commission to keep the State's share of the cost of the forest fire service within \$15,000 a year, for while certain expenses will increase as the organization is made more effective those charges should be offset by a reduction in fire-fighting bills. In any case the State now pays its full share, and if the cost does increase the townships and the property owners that are benefited should bear the excess. On the other hand, the Commission must ask for a reasonable increase from year to year in its appropriation for forestry. As the reserves increase in value they require more labor on them, yet under the law every expenditure for making timber or other product available, as well as cost of maintenance, is charged to the forestry account, while all income must be covered directly

into the State Treasury. Moreover, woodlot assistance, shade-tree direction, publications and propaganda are demanding more attention, and more money. The Forest Commission conceives that it is charged with an educational work which cannot be carried on without money but which promises to repay many fold any reasonable outlay. A summary of expenditures and receipts is annexed.

## Financial Statement, Forest Park Reservation Commission for Fiscal Year, 1912.

### ADMINISTRATION ACCOUNT.

Appropriations ..... \$ 9,200 00

#### EXPENDITURES.

Salary and expenses, Foresters and Secretary .....	\$5,086 85
Clerk and office expenses .....	1,330 13
Expenses, Members of Commission .....	102 70
Instruments and Books .....	100 85
Co-operation (Woodlot and Shade Trees) .....	106 80
Mays Landing Reserve .....	152 59
Bass River Reserve .....	347 82
Edward C. Stokes Reserve .....	253 17
Lebanon Reserve .....	435 11
Mount Laurel Reserve .....	841 94
Penn Reserve .....	328 83
Conger Tract .....	18 78
Willow Experiments .....	14 70
Cranberry Bog .....	16 50
Miscellaneous .....	59 00
Unexpended Balance .....	4 23
	<hr/>
	\$ 9,200 00

### FOREST FIRE ACCOUNT.

Appropriation ..... \$15,000 00

#### EXPENDITURES.

Salaries and Expenses State Firewardens .....	\$7,883 43
Clerk and office expenses .....	1,136 44
Extinguishing forest fires:	
On account of 1909 fires .....	8 00
On account of 1910 fires .....	172 68
On account of 1911 fires .....	985 32
On account of 1912 fires .....	911 07
Local Firewardens' salaries and special expenses....	1,098 94
Equipment .....	529 43
Special expenses .....	451 95
Miscellaneous .....	101 00
Unexpended balance .....	1,721 74
	<hr/>
	\$15,000 00

## REPORT OF THE FOREST COMMISSION.

FINANCIAL STATEMENT.—*Continued.*

## LAND PURCHASE ACCOUNT.

Appropriation carried forward by contract .....	\$ 522 40	
Supplemental appropriation .....	300 00	
		\$ 822 40
Refunded to Treasury, contracts cancelled .....		\$ 822 40

## RECEIPTS BY EXECUTIVE OFFICER.

Balance on hand November 1, 1911.....	\$ 42 92	
For Products of Reserves .....	508 57	
For Expenses of Forester in co-operative work .....	69 09	
From Settlements with Sundry Violators of Forest Fire Law .....	1,197 84	
Total.....		\$ 1,818 42
Paid to State Treasurer .....	\$ 585 12	
Paid to Sundry Township Treasurers .....	1,115 49	
Paid Justice-of-Peace costs .....	4 50	
Balance in hand October 31, 1912:		
Due State Treasurer .....	28 11	
Due Township Treasurers .....	85 20	
		\$ 1,818 42

## ORGANIZATION.

The administrative force of the Commission is on a satisfactory and apparently permanent basis. It is organized as follows:

## THE FOREST COMMISSION.

Ordinarily represented by its executive officer, (H. B. Kümmel.)

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STATE FORESTER  
(Alfred Gaskill)

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STATE FIREWARDEN (C. P. Wilber)	ASSISTANT FORESTER (J. O. Hazard)	6 Forest Reserve Wardens
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4 Division Firewardens  
110 Township Firewardens  
151 District Firewardens  
3 Fire Watchers

## THE FOREST PARK RESERVATION COMMISSION

HENRY B. KÜMMEL, *Executive Officer*  
ELMER H. SMITH  
CHARLES L. PACK  
WILLIAM W. SMALLEY



THE  
FOREST FIRE SERVICE  
OF NEW JERSEY  
BY TOWNSHIPS  
1912

Scale of Miles  
0 5 10

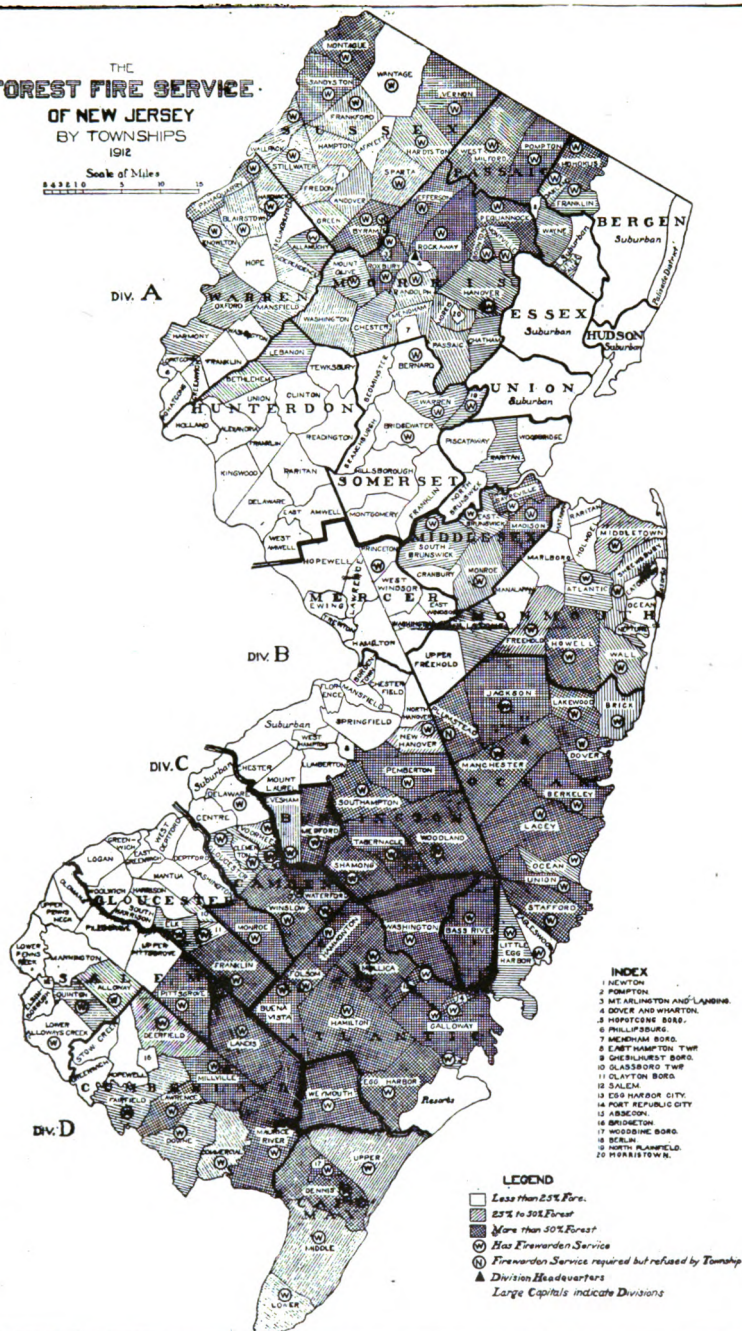


Fig. 4. The State, Showing Forests and Where Forest Fire Service is Maintained.



# The Forest Fire Service.

BY CHARLES P. WILBER, STATE FIREWARDEN.

## SUMMARY.

Weather again favorable to forest fires—Damage by fires much reduced—Railroads cause most fires, fewer than ever from brush burning—Fire service more efficient—Many violations of law established—Co-operation with Federal Government—Lookout and telephone construction—Railroad fire-lines extended.

## THE FIRE SEASON.

Unlike the last three years, 1912 was normally moist. An unusually late spring with its tendency towards fire was to a large degree offset by prevailing wet weather. Until the middle of May no prolonged dry spell threatened the woodland with the fires usually connected with such conditions, and after that time the rising sap and rapid growth of retarded vegetation tended to reduce the danger well below what is usual. When June was reached dry weather had become fixed, however, so that during this month and in July precipitation fell far enough under the normal to create drouth conditions. Although the rest of the central weather district shows a rainfall above the average in August, New Jersey did not share the moisture, and the usual late summer drouth was as pronounced as any of recent years. With September normal conditions returned and, though October was drier than ordinarily, heavy rainfall in the middle of the month and later prevented serious trouble with fall fires. Thus, while the rainfall for the year stands well above that for the last few years, drouth did occur to such a degree that forest fire conditions were on the whole as bad as heretofore. While there were 99 less spring fires this year than last, the summer record was reversed, with 89 more from June to September than a year ago, explaining why fires for the year show no marked numerical decrease despite a higher annual moisture average.

TABLE I.—FOREST FIRES IN 1912 AND PREVIOUS YEARS.

Year.	No. of Fires.	Total Acres Burned.	Acres per Fire.	Total Loss.	Loss per Fire.
No organized service, incomplete reports.					
1872, .....	.....	100,000	.....	\$1,000,000	.....
1880, .....	54	71,074	1,316	252,240	\$4,671
1885, .....	.....	123,000	.....	1,128,000	.....
1895, .....	49	66,120	1,349	600,000	12,245
1902, .....	65	98,850	1,520	169,323	2,605
1903, .....	79	85,046	1,076	305,744	3,870
1904, .....	81	41,530	512	193,413	2,388
Organized fire service.					
1907, .....	167	11,525	69	11,647	70
1908, .....	533	52,978	100	64,536	121
1909, .....	563	93,525	166	133,944	238
1910, .....	611	81,452	133	127,850	209
1911, Forest Fires, .....	289	64,404	122	86,940	165
Embryo Fires † .....	239				
1912, Forest Fires, .....	214	26,291	48	21,501	39
Embryo Fires, † .....	331				

†Burned less than 5 acres.

## NUMBER AND AREAS OF FIRES.

To one unfamiliar with the problem it may seem strange that with more and better wardens, continued enforcement of the law and increased co-operation both public and private, fires reported still multiply. It is by this feature, however, that the Fire Service measures its advance, when linked to the results shown in Table II. Highwater mark has probably not yet been reached in numbers, for as both the wardens and the public take more active interest in the work, in just the same proportion do hitherto unnoticed fires assume importance enough to demand attention and report. The increasing number of fires reported is, therefore, a sign of health, not of decline.

That the flood tide seems passed in area burned, however, is brought out strongly from this year's record. A year ago increased efficiency of the fire service was argued from the diminished number of large fires and the increased number of small ones caught

promptly by the wardens. The total number of fires burning over five acres is reduced from 289 in 1911 to 214 in 1912. Serious fires during the past year were so few that there have been but 51 reported to have burned more than 100 acres and of these but 3 reached the 1,000 acre mark. The sole increase even in numbers is found in fires that burned insignificant areas and did negligible damage. The total area burned has dropped from 64,404 acres a year ago to 26,291 acres, with an average area per fire of 48 acres contrasted with 122 acres in 1911. It is noteworthy also that practically every county shows a reduction; an indication that the improvement is not local, but universal.

TABLE II.—FIRES BY RELATIVE AREA BURNED AND COUNTIES, 1912.

COUNTY.	Number of Forest Fires.					Total Embryo Fires (less than 5 acres).
	5-10 Acres.	11-100 Acres.	101-1000 Acres.	Over 1000 Acres.	Total.	
<i>North Jersey,</i>						
Bergen, .....						25
Morris, .... 2	9				11	11
Passaic, .... 2	6				8	17
Somerset, ... 2	3	1			6	7
Sussex, ..... 1	4				5	14
Warren, .... 2		1			3	4
Total, .... 7	24	2		33	78	
<i>South Jersey.</i>						
Atlantic, .... 14	26	19	1	60	114	
Burlington, . . . . . 7		1	1	9	11	
Camden, .... 3	10	2		15	68	
Cape May, .. 3	9	4		16	16	
Cumberland, 6	18	7		31	19	
Gloucester, . 2	4	1		7	4	
Mercer .....						
Middlesex, .. . . . 2		3		5	2	
Monmouth, . 2	13	1		16	6	
Ocean, ..... 5	6	4		15	13	
Salem, ..... 2				2		
Fires that burned in more than one twp. ....			4	1	5	
Total, .... 35	97	46	3	181	253	
State total, . . . . . 42	121	48	3	214	331	



## CAUSES OF FIRES.

Forest fire control depends finally upon the education of the public to watchfulness both in themselves and in others. However, to point out the danger to them and to prevent fires from starting, it must be known upon whom, or what, to concentrate, as well as where trouble is most prevalent. The year's fires in relation to their causes are considered below and summarized in Table III.

*Unknown Causes.*

Only 140 of this year's fires started from causes not ascertained, and of these 63 were merely beginnings caught promptly. This is a marked reduction in this class, despite the fact that the total number of fires reported has increased, and is one of the most encouraging features of the year's work. The following shows the relative proportions of this class to the total fires for each year: 1908, 53% ; 1909, 46% ; 1910, 57% ; 1911, 39% ; 1912, 26%.

*Railroad Fires.*

As has always been the case, this class of fires again leads all others in numbers, and indeed shows a marked increase of small fires that may not be classed as forest fires, yet probably would have grown to such proportions but for prompt attention. This fact is not ground for condemnation of the railroads so much as a reflection of the improving attitude of the local service in reporting the small fires that hitherto have been extinguished but deemed too small for official notice. There is encouragement in the fact that while there were 295 railroad fires reported this year, as against 200 in 1911, 146 in 1910, 145 in 1909, 148 in 1908, the increase is entirely in the number of small fires. Of the 67 fires that may rightly be classed as forest fires only 25 burned to become large fires of 50 acres or more.

It is not expected that railroad fires can be appreciably reduced in number while conditions remain as they are, though their spread may be prevented. The menace of its locomotives to forest growth is one over which no company has more than limited mechanical control. Much improvement can still be made in maintaining spark arresters and screens in good repair, but these devices yet remain inadequate where high speed or heavy haul must be maintained.

Fire line construction has already helped to lessen the area burned per fire and presents the best apparent mechanical control generally available for coal-burning roads. (See pp. 52-56), Special patrol in many places will be found a cheap insurance for both railroad and land owner. (See pp. 48-50). Insistence by a company on a strict observance by its employees of every precaution in control of fire such as the Pennsylvania Railroad outlined this year cannot fail to help materially. (See p. 53). In dealing with this class the major emphasis, however, must lie on preparedness to put out fires promptly rather than on control of their cause.

### *Brush Fires.*

The effect of rigid enforcement of the brush-burning permit law stands out clearly in the continually decreasing number of fires connected with this work. There were 65 fires definitely allied with brush burning last year, and but 38 recorded from this cause during the current year. This reduction is definitely traced to the increased care used by those burning brush, and to the fact that a continually decreasing number find it necessary to burn brush at all. It is to carelessness or ignorance that all so-called brush fires owe their origin. As the danger of handling fires becomes better recognized, because of active warning or penalties imposed, these causes are removed.

There were 4,100 permits issued for burning brush during the year, and fewer violations of this requirement.

## REPORT OF THE FOREST COMMISSION.

TABLE III.—FIRES BY CAUSES AND COUNTIES, 1912.

COUNTY.	NUMBER.														Totals.
	Locomotive.		Brush Burning.		Smokers.		Incendiary.		Miscellaneous.		Unknown.				
<i>North Jersey.</i>	FF	eF	FF	eF	FF	eF	FF	eF	FF	eF	FF	eF	FF	eF	
Bergen, .....	...	17	...	2	...	...	...	...	...	1	...	5	...	25	
Morris, .....	1	5	1	1	2	1	...	...	3	2	4	2	11	11	
Passaic, .....	3	15	...	...	...	...	...	...	...	...	5	2	8	17	
Somerset, .....	...	...	1	...	1	1	...	...	...	2	4	4	6	7	
Sussex, .....	1	8	...	...	...	...	...	...	1	4	3	2	5	14	
Warren, .....	2	3	...	...	...	...	...	...	1	...	...	1	3	4	
Totals, .....	7	48	2	3	3	2	...	...	5	9	16	16	33	78	
<i>South Jersey.</i>															
Atlantic, .....	24	84	8	1	5	3	...	2	7	5	16	19	60	114	
Burlington, .....	2	5	3	1	2	...	...	...	1	...	1	5	9	11	
Camden, .....	9	58	...	...	1	1	...	...	...	2	5	7	15	68	
Cape May, .....	12	10	1	1	...	...	...	...	...	1	3	4	16	16	
Cumberland, .....	3	9	5	...	1	...	...	...	6	2	16	8	31	19	
Gloucester, .....	2	2	2	...	...	...	...	...	...	2	3	...	7	4	
Mercer, .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Middlesex, .....	...	...	...	1	2	...	...	...	...	1	3	...	5	2	
Monmouth, .....	5	3	2	1	3	...	...	...	1	1	5	1	16	6	
Ocean, .....	3	9	3	1	1	...	...	...	...	...	8	3	15	13	
Salem, .....	...	...	...	...	...	...	...	...	...	...	2	...	2	...	
Fires that burned in more than one township, .....	...	...	3	...	...	...	...	...	2	...	...	...	5	...	
Totals, .....	60	180	27	6	15	4	...	2	17	14	62	47	181	253	
State Totals, ..	67	228	29	9	18	6	...	2	22	23	78	63	214	331	

FF—Forest Fires.

eF—Embryo Fires; (less than 5 acres).

*Smokers' Fires.*

The number of fires attributed to smokers shows an increase of from 19 in 1911 to 24 in 1912, despite the fact that fires of this nature are the hardest for which to fix responsibility. It must be repeated that undoubtedly the major proportion of the fires attributed to unknown and miscellaneous causes would fall into this column if their origin could be determined. As was also emphasized last year, the elimination of such fires must be effected by the smokers themselves. The conditions governing their origin are such that adequate measures to reduce their number are entirely disproportional to the cost involved. However, it is hopeful to note that with the means now available more such fires are located than heretofore.

*Incendiary Fires.*

So few have fires of this class become that but two are known to have originated during the last year from malicious intent. One of the offenders has already been brought to trial and the other case points to the same outcome.

*Miscellaneous Fires.*

Into this class fall fires started by hunters, automobilists, campers, etc., and the number so fixed shows an increase over last year of from 31 to 45. Of these the sportsmen set 11 and huckleberry pickers 9, whether by careless smoking, with intent, or in some other way is not known. It does grow more plain each year, however, that these two classes of forest users must be watched and warned. Another variety of this class of fires is demanding especial attention, viz., those started by certain types of fireworks in which the fire persists. These exhibitions endanger more than the woods, for relics from which forest fires have started show that the fire carriers are capable of doing damage to crops or to any material not fire proof.

## THE FOREST FIRE SERVICE.

At the end of the first full year of service under the re-organization described a year ago, the Fire Service has plainly proven its increased efficiency. Of the 2,000,000 acres of forest in the State,

the existing organization covers 1,700,000 acres. A large portion of the remainder lies in small scattered woodlands, supervision over which properly rests on the owner (See p. 50). Some increase in the area protected is planned for next year and it is hoped that when it closes, the entire area that should properly be the State's responsibility will be under firewarden service.

During the past year wardens have been withdrawn from Alpine Borough, Bergen County, by mutual agreement between the local government and the Forest Commission, because the exposure did not seem to justify the expense of maintaining wardens. The forest area is small and tends more to park conditions than to true forest. On the other hand wardens have been added in seven new townships, as follows: Dennis, Frankford, Hopatcong, Monroe, (Glo. Co.), Princeton, Wantage and Woodland. It is also hoped that Plumstead Township, the last of those heretofore refusing to install the system, will do so with the opening of a new calendar year and thereby make it unnecessary to continue a division warden as its township warden.

One particular advance made is in the use of motor vehicles by the division wardens. A motor cycle used by one and more recently an automobile by another at fixed rates of mileage have so reduced distances and lost time and so increased their scope of influence that results formerly impossible have been obtained in both administrative and investigative work.

The local service now includes 110 township wardens, and 151 district and deputy wardens, who with the 3 fire watchers that the State employs, make a total of 264 men actively engaged in fire control covering 111 townships. The effect of a closer touch with the local wardens stands out especially plainly in the fact that 73 fewer State investigations of fires were necessary this year than last, yet responsibility has been fixed for 15 more cases. This is a real tribute not only to the wardens' activity, but to their thoroughness in handling details that heretofore have placed an unnecessary and hampering burden on the State's wardens. It also gives the latter opportunity to take up the more obscure cases that could be given no attention under the old organization. There is also a growing disposition among the wardens to disregard the natural claim of friend or neighbor to special consideration and to deal with all infringements of the law alike, a long stride toward effective service. These facts with increasing promptness



**Fig. 5. Pine Forest, With Oak, Made Worthless by Repeated Fires.**



**Fig. 6. A Similar Forest Not Burned and Well Grown.**



and efficiency in actual fire fighting, (see pp. 15-17), evidence a continuing advance in every line. There is still much dead wood to be replaced by sound timber, and many local situations are yet in a

TABLE IV.—SUMMARY OF FOREST FIRE BUSINESS 1912 WITH SOME COMPARATIVE FIGURES FROM TWO YEARS PRECEDING.

Date of Fires.	Total Reports Received		Total Cases Specially Investigated.	Total Cases Violation Fixed	Local Fire Service.		Action on Supposed Violations During 1912.							
	Forest Fires.	Embryo Fires.†			Total Township Covered.	Total No. Firewardens.	Individual				Railroad Claims.		Dropped.	
							Court Trial		No Trial		Settled.	Pending.		
							Settled.	Pending.	Settled.	Pending.				Settled.
1910, ...	611		No data	No data	98	229	1	1	1	...	5	...	2	
1911, ...	309	239	206	237	100	228	4	3	9	...	73	12	8	
1912, ...	214	331	133	252	110†	261	...	4	33	6	72	120	17	
	...	...	...	...	Totals		5	8*	43	6	150	132	27	

†Burned less than five acres.

\*Two of these have been tried and are awaiting appeal. In all the others except one 1912 case, the offenders have left the State.

†In one additional township a division warden acts as township warden.

condition far from satisfactory, but the year has been one of improvements so pronounced that there is nothing but encouragement felt for the ensuing season.

During the year the Forest Fire Manual, published in 1910, was thoroughly revised and enlarged and has been found of great value in informing both local wardens and the township officers of the way in which Fire Service business should be handled.



## REPORT OF THE FOREST COMMISSION.

TABLE V.—FOREST FIRES, 1912.

County and Township.	Number		Acres Burned.	Loss to Forests and Other Property.	Cost to Extinguish.	Paid by †		
	Forest Fires.	Embryo Fires.				Township.	State.	Offenders.
<b>Atlantic County—</b>								
Absecon (City), . . . . .								
Buena Vista, . . . . .	6	7	968	\$424	\$75.65	\$16.42	\$16.43	\$42.80
Egg Harbor, . . . . .	5		1075	595	63.10	31.55	31.55	
Egg Harbor (City), . . . . .		3			19.00	8.00	8.00	3.00
Folsom, . . . . .								
Galloway, . . . . .	11	30	539	400	258.05	60.92	60.93	136.20
Hamilton, . . . . .	13	4	2427	1325	211.90	97.95	97.95	16.00
Hammonton, . . . . .	8	18	1950	1685	483.21	230.85	230.86	21.50
Mullica, . . . . .	16	50	1219	1005	550.46	194.89	194.90	160.67
Port Republic, . . . . .								
Weymouth, . . . . .	5	2	580	755	48.05	14.82	14.83	18.40
Total, . . . . .	64	114	9258	\$6989	\$1709.42	\$655.40	\$655.45	\$398.57
<b>Bergen County—</b>								
Franklin, . . . . .								
Hohokus, . . . . .		3			\$5.80	\$2.90	\$2.90	
Oakland (Boro.), . . . . .		22			32.25	8.37	8.38	\$15.50
Ridgefield (Boro.), . . . . .								
Total, . . . . .		25			\$38.05	\$11.27	\$11.28	\$15.50
<b>Burlington County—</b>								
Bass River, . . . . .		1		\$5	\$34.85	\$14.42	\$14.43	\$6.00
Evesham, . . . . .		1		5	6.00	3.00	3.00	
Medford, . . . . .		2		15	11.85	5.92	5.93	
New Hanover, . . . . .								
Pemberton, . . . . .								
Shamong, . . . . .	3	5	160	25	46.95	14.00	14.00	18.95
Southampton, . . . . .	2	1	115	50	39.50	3.00	3.00	33.50
Tabernacle, . . . . .	3		400	500	64.85	7.15	7.15	19.00
Washington, . . . . .	2		4000	3000	376.00	188.00	188.00	
Woodland, . . . . .	3	1	1015	1050	74.80	28.10	28.10	18.60
Total, . . . . .	13	11	5690	\$4650	\$654.80	\$263.59	\$263.61	\$96.05
<b>Camden County—</b>								
Berlin, . . . . .								
Chesilhurst (Boro.), . . . . .	2	3	24	\$10	\$19.15	\$9.57	\$9.58	
Clementon, . . . . .	1		30	15	7.00	3.50	3.50	
Delaware, . . . . .								
Gloucester, . . . . .	2	2	108	110	26.13	13.06	13.07	
Voorhees, . . . . .								
Waterford, . . . . .	2	3	200	185	20.60	5.10	5.10	\$10.40
Winslow, . . . . .	8	60	460	415	289.00	29.27	29.28	230.45
Total, . . . . .	15	68	822	\$735	\$361.88	\$60.50	\$60.53	\$240.85

# FIREWARDEN'S REPORT.

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TABLE V.—FOREST FIRES, 1912.—*Continued.*

County and Township.	Number		Acres Burned.	Loss to Forests and Other Property.	Cost to Extinguish.	Paid by †		
	Forest Fires.	Embryo Fires.				Township.	State.	Offenders.
Cape May County—								
Dennis, .....	2	3	25	\$55	\$21.25	\$3.00	\$3.00	\$15.25
Lower, .....	1	5	15	100	35.50	15.75	15.75	4.00
Middle, .....	10	8	564	1100	138.85	22.37	22.38	94.10
Upper, .....	3	...	731	730	74.85	31.92	31.93	11.00
Woodbine (Boro.), ..	...	...	...	...	...	...	...	...
Total, .....	16	16	1335	\$1985	\$270.45	\$73.04	\$73.06	\$124.35
Cumberland County—								
Commercial, .....	2	...	150	\$175	\$6.25	\$3.12	\$3.13	.....
Deerfield, .....	2	...	85	75	18.00	3.00	3.00	\$12.00
Downe, .....	1	3	6	15	37.50	18.75	18.75	.....
Fairfield, .....	4	...	112	125	51.25	18.12	18.13	15.00
Landis, .....	8	2	1485	885	125.40	49.45	49.45	26.50
Lawrence, .....	2	...	145	275	76.20	38.10	38.10	.....
Maurice River, .....	4	6	150	150	141.37	47.93	47.94	45.50
Millville (City), ...	10	8	782	902	167.00	61.00	61.00	45.00
Total, .....	33	19	3170	\$2902	\$622.97	\$239.47	\$239.50	\$144.00
Gloucester County—								
Clayton (Boro.), .....	...	...	...	...	...	...	...	.....
Elk, .....	1	...	10	\$40	\$6.00	\$3.00	\$3.00	.....
Franklin, .....	4	3	112	120	67.30	27.17	27.18	\$12.95
Monroe, .....	2	1	400	500	38.40	14.20	14.20	10.00
Total, .....	7	4	522	\$640	\$111.70	\$44.37	\$44.38	\$22.95
Mercer County—								
Princeton, .....	...	...	...	...	...	...	...	.....
Total, .....	...	...	...	...	...	...	...	.....
Middlesex County—								
East Brunswick, .....	...	1	...	...	\$2.00	\$1.00	\$1.00	.....
Madison, .....	...	...	...	...	...	...	...	.....
Monroe, .....	1	...	400	\$150	54.10	27.05	27.05	.....
Saverville, .....	3	1	1230	480	19.30	9.65	9.65	.....
South Brunswick, ...	1	...	20	20	366.22	183.11	183.11	.....
Total, .....	5	2	1650	\$650	\$441.62	\$220.81	\$220.81	.....
Monmouth County—								
Atlantic, .....	2	1	62	\$25	\$14.00	\$3.00	\$3.00	\$8.00
Freehold, .....	4	...	510	800	95.00	47.50	47.50	.....
Howell, .....	8	5	285	215	157.95	19.32	19.33	119.30
Middletown, .....	...	...	...	...	...	...	...	.....
Shrewsbury, .....	1	...	43	20	11.70	5.85	5.85	.....
Wall, .....	1	...	50	75	...	...	...	.....
Total, .....	16	6	950	\$1135	\$278.65	\$75.67	\$75.68	\$127.30

TABLE V.—FOREST FIRES, 1912.—*Continued.*

County and Township.	Number		Acres Burned.	Loss to Forests and Other Property.	Cost to Extinguish.	Paid by †		
	Forest Fires.	Embryo Fires.				Township.	State.	Offenders.
<b>Morris County—</b>								
Boonton, .....	1	...	35	\$10	\$2.00	\$1.00	\$1.00	.....
Hanover, .....	...	1	...	...	5.00	2.50	2.50	.....
Jefferson, .....	...	...	...	...	...	...	...	.....
Montville, .....	...	...	...	...	...	...	...	.....
Mt. Arlington, .....	...	...	...	...	...	...	...	.....
Mt. Olive, .....	1	...	20	20	3.00	...	...	\$3.00
Pequannock .....	1	2	22	20	46.20	9.40	9.40	27.40
Randolph, .....	1	...	10	...	11.60	5.80	5.80	.....
Rockaway, .....	5	4	202	132	60.40	30.20	30.20	.....
Roxbury, .....	2	4	20	11	12.30	2.95	2.95	6.40
<b>Total, .....</b>	<b>11</b>	<b>11</b>	<b>309</b>	<b>\$193</b>	<b>\$140.50</b>	<b>\$51.85</b>	<b>\$51.85</b>	<b>\$36.80</b>
<b>Ocean County—</b>								
Berkeley, .....	1	...	200	\$50	\$24.00	.....	.....	\$24.00
Brick, .....	1	...	300	50	27.50	\$13.75	\$13.75	.....
Dover, .....	1	...	100	100	28.00	14.00	14.00	.....
Eagleswood, .....	...	...	...	...	...	...	...	.....
Jackson, .....	3	4	130	75	45.20	22.60	22.60	.....
Lacey, .....	1	3	10	5	9.00	.....	.....	9.00
Lakewood, .....	1	1	300	210	18.10	4.50	4.50	9.10
Little Egg Harbor, .....	...	...	...	...	...	...	...	.....
Manchester, .....	4	5	337	425	84.00	5.60	5.60	72.80
Ocean, .....	3	...	30	15	24.50	12.25	12.25	.....
Plumstead, § .....	...	...	...	...	...	...	...	.....
Stafford, .....	...	...	...	...	...	...	...	.....
Union, .....	...	...	...	...	...	...	...	.....
<b>Total, .....</b>	<b>15</b>	<b>13</b>	<b>1407</b>	<b>\$930</b>	<b>\$260.30</b>	<b>\$72.70</b>	<b>\$72.70</b>	<b>\$114.90</b>
<b>Passaic County—</b>								
Pompton, .....	5	1	180	\$185	\$36.40	\$17.20	\$17.20	\$2.00
West Milford, .....	3	16	13	13	67.20	18.50	18.50	30.20
<b>Total, .....</b>	<b>8</b>	<b>17</b>	<b>193</b>	<b>\$198</b>	<b>\$103.60</b>	<b>\$35.70</b>	<b>\$35.70</b>	<b>\$32.20</b>
<b>Salem County—</b>								
Alloway, .....	...	...	...	...	...	...	...	.....
L'r Alloways Creek, ..	1	...	100	\$60	\$23.00	\$11.50	\$11.50	.....
Pittsgrove, .....	1	...	15	30	8.25	4.12	4.13	.....
Quinton, .....	...	...	...	...	...	...	...	.....
<b>Total, .....</b>	<b>2</b>	<b>...</b>	<b>115</b>	<b>\$90</b>	<b>\$31.25</b>	<b>\$15.62</b>	<b>\$15.63</b>	<b>.....</b>

## FIREWARDEN'S REPORT.

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TABLE V.—FOREST FIRES, 1912.—*Continued.*

County and Township.	Number		Acres Burned.	Loss to Forests and Other Property.	Cost to Extinguish.	Paid by †		
	Forest Fires.	Embryo Fires.				Township.	State.	Offenders.
<b>Somerset County—</b>								
Bernard, .....	1	1	20	.....	\$29.00	\$14.50	\$14.50	.....
Bridgewater, .....	.....	2	.....	.....	10.00	5.00	5.00	.....
North Plainfield, ....	4	4	104	\$65	32.30	15.02	15.03	\$2.25
Warren, .....	1	...	150	50	17.25	8.62	8.63	.....
Total, .....	6	7	274	\$115	\$88.55	\$43.14	\$43.16	\$2.25
<b>Sussex County—</b>								
Byram, .....	.....	2	.....	.....	\$8.00	.....	.....	\$8.00
Frankford, .....	.....	.....	.....	.....	.....	.....	.....	.....
Hardyston, .....	2	7	106	\$54	46.45	\$9.00	\$9.00	28.75
Hopatcong, .....	.....	.....	.....	.....	.....	.....	.....	.....
Montague, .....	.....	1	.....	.....	5.60	2.80	2.80	.....
Sandyston, .....	.....	1	.....	.....	7.00	3.50	3.50	.....
Sparta, .....	.....	.....	.....	.....	.....	.....	.....	.....
Stillwater, .....	.....	.....	.....	.....	.....	.....	.....	.....
Vernon, .....	3	3	250	125	60.25	30.12	30.13	.....
Wallpack, .....	.....	.....	.....	.....	.....	.....	.....	.....
Wantage, .....	.....	.....	.....	.....	.....	.....	.....	.....
Total, .....	5	14	356	\$179	\$127.60	\$45.42	\$45.43	\$36.75
<b>Warren County—</b>								
Allamuchy, .....	.....	.....	.....	.....	.....	.....	.....	.....
Blairstown, .....	.....	.....	.....	.....	.....	.....	.....	.....
Hardwick, .....	.....	.....	.....	.....	.....	.....	.....	.....
Knowlton, .....	3	3	240	\$110	\$49.15	\$9.60	\$9.60	\$29.95
Pahaquarry, .....	.....	1	.....	.....	10.00	.....	.....	10.00
Total, .....	3	4	240	\$110	\$59.15	\$9.60	\$9.60	\$39.95
<b>State Total, ....</b>	<b>219*</b>	<b>331</b>	<b>26291</b>	<b>\$21501</b>	<b>\$5300.49</b>	<b>\$1918.15</b>	<b>\$1918.37</b>	<b>\$1432.42†</b>

\* This total is greater than the actual number (214) because 5 fires burned in two or more townships at once.

† The sum of these columns often differs from the corresponding "Cost to Extinguish" item because a fine was larger than the bill, or a bill was withdrawn, etc.

‡ This total is greater than the year's collection (\$1312.19) because all violation cases are not yet settled.

§ No fire service.

## THE FIRE SERVICE'S VALUE.

The value of forest protection to the future is the true measure of its success, for forest development must deal with what is to come. This standard is gradually taking hold but is still regrettably far from universal. However, in New Jersey this ultimate gain is supplemented by yearly reduced annual property loss and fire fighting cost to a degree that merits general support even from this viewpoint alone. In 1911 the property loss for the year was estimated at almost \$87,000, despite a drop of over \$40,000 from the previous year, while in 1912 it will not exceed \$21,500. In 1911 it cost \$6709.56 to put out forest fires, this year but \$5300.49 was expended in this way, to which must be added \$984.58 paid for local wardens' salaries. Offsetting this is \$36,000 worth of property that is definitely known to have been saved by the Fire Service, exclusive of all forest land protected. The list includes homes, schoolhouses, cranberry bogs, orchards and crops and represents at best but a fragmentary record of the true results achieved.

## VIOLATIONS OF THE LAW.

The progress made in handling violations of the law maintains the improvement found in other branches of the Fire Service work. Though it is not sought to impose penalties for their sake alone, it does mark an advance in the administration of the law when violations formerly overlooked or undiscovered, entail some penalty on the offender. No law, unless enforced, can reach its fullest usefulness. Of the 545 fires reported in the year 252 are known to have been violations of the law. Of this large number, nearly half have been disposed of within the year and it is noticeable that in but 18 cases did circumstances later develop to require that action be withdrawn. These cases are reported in detail in Table VII and the year's work is summarized in Table VI.

For the most part, the violations are unintentional, and for this reason the penalties imposed are mostly light. When there are specially extenuating circumstances they have been remitted entirely.

# FIREWARDEN'S REPORT.

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TABLE VI.—VIOLATIONS OF THE FOREST FIRE LAW HANDLED IN 1912: STATUS OCTOBER 31, 1912.

Kind of Violation.	1910 Cases Carried Over.					1911 Cases Carried Over.					1912 Fires.				
	Totals.	Pending.	Settled.	Dropped.	Offender Out of Jurisdiction.	Totals.	Pending.	Settled.	Dropped.	Offender Out of Jurisdiction.	Totals.	Pending.	Settled.	Dropped.	Offender Out of Jurisdiction.
Railroad .....	7	..	6	2	..	91	12	73	6	..	207	120	72	16	..
Brush Burning, ...	3	..	2	..	1	16	..	11	2	3	36	7	27	1	1
Smokers, .....	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..
Miscellaneous, .....	..	..	..	..	..	2	..	2	..	..	8	2	5	1	..
Totals, .....	10	..	7	2	1	109	12	86	8	3	252	129	105	17	1

## REPORT OF THE FOREST COMMISSION.

TABLE VII. VIOLATIONS OF THE FOREST FIRE LAW, 1912.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
Nov. 2, 1911.	Atlantic County—			
Dec. 28, 1911.	Buena Vista, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
April 23, .....	Buena Vista, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$6.00.
April 26, .....	Buena Vista, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$8.00.
July 2, .....	Buena Vista, .....	Tony Teli, .....	Allowed brush fire to escape, .....	Paid firewarden's bill, \$5.60.
July 6, .....	Buena Vista, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 6, .....	Buena Vista, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 6, .....	Buena Vista, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 9, .....	Buena Vista, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
August 3, .....	Buena Vista, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 7, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$4.00.
April 11, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$6.00.
April 23, .....	Galloway, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$8.00.
April 23, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$8.00.
April 24, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
April 24, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$1.00.
April 25, .....	Galloway, .....	Max Kinios, .....	Burned brush without permit, .....	
April 25, .....	Galloway, .....		and allowed fire to escape, .....	
April 26, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$7.00.
April 26, .....	Galloway, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$5.00.
May 2, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$6.00.
May 17, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
May 18, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 21, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 21, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 26, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 26, .....	Galloway, .....	Henry Hombustle, .....	Burned brush without permit, .....	Released with warning.
May 27, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 28, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 29, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 29, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
June 4, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$8.00.

# FIREWARDEN'S REPORT.

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TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
	Atlantic County—			
June 12, .....	Galloway, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
June 23, .....	Galloway, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
June 30, .....	Galloway, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
July 4, .....	Galloway, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
July 10, .....	Galloway, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
July 11, .....	Galloway, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
April 6, .....	Hamilton, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Paid firewarden's bill, \$5.50.
April 6, .....	Hamilton, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
April 6, .....	Hamilton, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.50.
April 9, .....	Hamilton, .....	Annie Wodeshak, .....	Allowed brush fire to escape, .....	Paid firewarden's bill, \$5.00.
Dec. 7, 1911, .....	Hammononton, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
April 24, .....	Hammononton, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
May 20, .....	Hammononton, .....	Charles Losse, .....	Burned brush without permit, and allowed fire to escape, .....	Paid firewarden's bill, \$1.50.
May 22, .....	Hammononton, .....	Albert Smith, .....	Burned brush without permit, and allowed fire to escape, .....	Pending, fled jurisdiction.
May 27, .....	Hammononton, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Paid fine, \$5.00.
May 31, .....	Hammononton, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
June 26, .....	Hammononton, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
July 4, .....	Hammononton, .....	Patriotic Order Sons of America, .....	Caused fire by fireworks at celebration, .....	Pending, claim submitted.
July 13, .....	Hammononton, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Pending.
July 16, .....	Hammononton, .....	Hammononton Town, .....	Caused fire by fireworks at celebration, .....	Pending, claim submitted,
April 7, .....	Mullica, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	State's one half of bill refused.
April 7, .....	Mullica, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
April 9, .....	Mullica, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
April 9, .....	Mullica, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Dropped, township bill too tardy.
April 9, .....	Mullica, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
April 9, .....	Mullica, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.



## REPORT OF THE FOREST COMMISSION.

TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1912—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENSES.	OFFENSE.	SETTLEMENT.
April 9, .....	Atlantic County—			
April 11, .....	Mullica, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 11, .....	Mullica, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 11, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 24, .....	Mullica, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 24, .....	Mullica, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 24, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 24, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 24, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 25, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 3, .....	Mullica, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending.
May 17, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 25, .....	Mullica, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 28, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 28, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
June 9, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
June 21, .....	Mullica, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
June 22, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
June 23, .....	Mullica, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
June 30, .....	Mullica, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 8, .....	Mullica, .....	John Weber, .....	Maliciously set t c, .....	Pending, claim submitted.
July 10, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Prosecuted, appeal pending.
August 10, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 21, .....	Weymouth, .....	Anderson Burgeois, .....	Allowed brush fire to escape, .....	Pending.
June 13, .....	Weymouth, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending.
June 29, .....	Weymouth, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
Nov. 4, 1911, .....	Bergen County—			
Dec. 29, 1911, .....	Oakland Borough, .....	Wm. Brownbridge, .....	Burned brush without permit, .....	Released with warning.
June 21, 1912, .....	Oakland Borough, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$5.00.
July 4, .....	Oakland Borough, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.50.
		N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Pending.

# FIREWARDEN'S REPORT.

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TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1912—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
July 24, .....	Oakland Borough, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Pending.
July 26, .....	Oakland Borough, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 26, .....	Oakland Borough, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Pending.
July 26, .....	Oakland Borough, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Pending.
April 24, .....	Burlington County—			
June 10, .....	Basin River, .....	Maesser Haddad, .....	Allowed brush fire to escape, ..	Paid firewarden's bill, \$8.00.
June 10, .....	Shawang, .....	New Jersey Central R.R., .....	Fire set by locomotive, .....	Dropped township bill too tardy.
July 5, .....	Shamong, .....	New Jersey Central R.R., .....	Fire set by locomotive, .....	Dropped township bill too tardy.
April 4, .....	Southampton, .....	Angelo Lugardo and	Caused fire by careless smok-	
May 4, .....	Southampton, .....	Frank Montone, .....	ing, .....	Paid firewarden's bill, \$8.50.
May 28, .....	Southampton, .....	Chas. McCloskey, .....	Burned brush without permit	Pending prosecution ordered.
June 23, .....	Tabernacle, .....	Frank Horner and Lewis	and allowed fire to escape, ..	Released, secured withdrawal of bill from fighters.
April 26, .....	Tabernacle, .....	Horner, .....	Allowed brush fire to escape, ..	Pending.
May 4, .....	Woodland, .....	New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.60.
May 27, .....	Woodland, .....	Joseph Emmons, .....	Allowed brush fire to escape, ..	Pending claim submitted.
April 23, .....	Woodland, .....	New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$14.00.
April 24, .....	Woodland, .....	James L. Applegate, .....	Allowed brush fire to escape, ..	Pending, claim submitted.
Nov. 16, 1911, .....	Camden County—			Pending, claim submitted.
February 23, .....	Waterford, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$5.00.
February 25, .....	Waterford, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Dropped township bill too tardy.
March 18, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Dropped township bill too tardy.
March 23, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
March 23, .....	Winslow, .....	New Jersey Central R.R., .....	Fire set by locomotive, .....	Dropped township bill too tardy.
March 23, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
March 23, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Dropped township bill too tardy.

## REPORT OF THE FOREST COMMISSION.

TABLE VII. VIOLATIONS OF THE FOREST FIRE LAW, 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
March 25, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.35.
March 28, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$50.
April 1, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$7.00.
April 1, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.75.
April 3, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.50.
April 6, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$10.00.
April 7, .....	Winslow, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$5.00.
April 7, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.50.
April 9, .....	Winslow, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill \$3.00.
April 11, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$1.00.
April 11, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.50.
April 11, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$12.00.
April 11, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.25.
April 11, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$1.00.
April 11, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.25.
April 12, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
April 12, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$4.50.
April 23, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$6.25.
April 23, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$7.50.
April 23, .....	Winslow, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 23, .....	Winslow, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 23, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 24, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$6.50.
April 24, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.50.
April 24, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$17.00.
April 27, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$1.25.
April 27, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$5.50.
May 3, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 4, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.

## FIREWARDEN'S REPORT.

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TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
May 4, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$9.00.
May 4, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.25.
May 4, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$ .25.
May 11, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 11, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 27, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 28, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 31, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
June 2, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
June 3, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
June 13, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 1, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 7, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 8, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 8, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 9, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 9, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 9, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 10, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 10, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
Cape May County—				
April 23, .....	Dennis, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
July 7, .....	Dennis, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
Dec. 19, 1911, .....	Lower, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
Jan. 22, 1912, .....	Lower, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
Dec. 13, 1911, .....	Middle, .....	G. Y. Jordan, .....	Burned brush without permit	Released with warning.
April 1, .....	Middle, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$8.00.
April 4, .....	Middle, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$12.70.

## REPORT OF THE FOREST COMMISSION.

TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1912—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
April 5, .....	Middle, .....	Atlantic City R. R., ...	Fire set by locomotive, .....	Dropped, township bill too tardy.
April 5, .....	Middle, .....	John F. Johnson, .....	Allowed brush fire to escape, .....	Paid firewarden's bill, \$10.00.
April 23, .....	Middle, .....	Pennsylvania R. R., ...	Fire set by locomotive, .....	Dropped, township bill too tardy.
April 23, .....	Middle, .....	Pennsylvania R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$3.90.
April 23, .....	Middle, .....	Pennsylvania R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$3.90.
April 23, .....	Middle, .....	Pennsylvania R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$16.25.
April 23, .....	Middle, .....	Pennsylvania R. R., ...	Fire set by locomotive, .....	Pending, claim submitted.
May 4, .....	Middle, .....	Atlantic City R. R., ...	Fire set by locomotive, .....	Pending, claim submitted.
August 6, .....	Middle, .....	Atlantic City R. R., ...	Fire set by locomotive, .....	Pending, claim submitted.
September 11, ..	Middle, .....	Atlantic City R. R., ...	Fire set by locomotive, .....	Pending, claim submitted.
June 13, .....	Upper, .....	Atlantic City R. R., ...	Fire set by locomotive, .....	Pending, claim submitted.
June 23, .....	Upper, .....	Atlantic City R. R., ...	Fire set by locomotive, .....	Pending, claim submitted.
June 7, .....	Cumberland County— Commercial, .....	New Jersey Central R.R. ties, .....	Section men carelessly burning ties, .....	Pending, claim submitted.
August 30, .....	Deerfield, .....	Marigo Mammo, .....	Allowed brush fire to escape, .....	Pending.
July 14, .....	Downe, .....	Herbert Campbell, .....	Burned brush without permit, .....	Released with warning.
September 10, ..	Fairfield, .....	W. E. Shoemaker, .....	Allowed brush fire to escape, .....	Pending.
February 27, .....	Landis, .....	Pennsylvania R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$4.00.
April 23, .....	Landis, .....	Wm. G. Snyder, .....	Burned brush without permit, and allowed fire to escape, .....	Paid fine, \$10.00.
May 3, .....	Maurice River, .....	Pennsylvania R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$8.09.
May 3, .....	Maurice River, .....	Pennsylvania R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$8.50.
May 10, .....	Maurice River, .....	Pennsylvania R. R., ...	Fire set by locomotive, .....	Dropped, township bill too tardy.
May 10, .....	Maurice River, .....	Pennsylvania R. R., ...	Fire set by locomotive, .....	Dropped, township bill too tardy.
June 7, .....	Maurice River, .....	Ralph C. Wilson and son	Allowed brush fire to escape, .....	Paid firewarden's bill, \$27.00.
April 18, .....	Millville, .....	Charles Garrison, .....	Allowed brush fire to escape, .....	Pending.

# FIREWARDEN'S REPORT.

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TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP	OFFENDER.	OFFENSE.	SETTLEMENT.
June 12, .....	Millville, .....	National Dredging and Lighterage Company,...	Fire escaped from engine, ....	Paid firewarden's bill, \$15.80.
April 3, .....	Gloucester County— Franklin, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.30.
May 11, .....	Franklin, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$4.30.
May 31, .....	Franklin, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 6, .....	Monroe, .....	Charles Errig, .....	Burned brush without permit, and allowed fire to escape, ..	Paid fine \$3.00.
April 11, .....	Monroe, .....	William Stillwell, .....	Burned brush without permit, and allowed fire to escape, ..	Paid firewarden's bill, \$5.00.
July 9, .....	Monroe, .....	Atlantic City R. R., ...	Fire set by locomotive, .....	Pending.
April .....	Middlesex County— Sayreville, .....	Christian Straub, .....	Burned brush without permit,	Released with warning.
May 21, .....	Monmouth County— Atlantic, .....	J. W. Towers, .....	Allowed brush fire to escape,...	Paid firewarden's bill, \$5.00.
August 25, ..	Atlantic, .....	New Jersey Central R.R.	Fire set by locomotive, .....	Pending, claim submitted.
April 6, .....	Howell, .....	New Jersey Central R.R.	Fire set by locomotive, .....	Pending, claim submitted.
April 2, .....	Howell, .....	New Jersey Central R.R.	Fire set by locomotive, .....	Paid firewarden's bill, \$9.25.
May 3, .....	Howell, .....	William Burgess, .....	Allowed brush fire to escape,...	Paid firewarden's bill, \$49.50,
May 3, .....	Howell, .....	New Jersey Central R.R.	Fire set by locomotive, .....	Pending claim submitted.
May 4, .....	Howell, .....	New Jersey Central R.R.	Fire set by locomotive, .....	Pending claim submitted.
June 11, .....	Howell, .....	New Jersey Central R.R.	Fire set by locomotive, .....	Pending claim submitted.
August 15, ...	Howell, .....	N. Heiselberg, .....	Burned brush without permit, and allowed fire to escape, ..	Pending.
October 21, ...	Howell, .....	New Jersey Central R.R.	Fire set by locomotive, .....	Pending.
May 28, .....	Morris County— Mount Olive, .....	George Illman, .....	Burned brush without permit, and allowed fire to escape, ..	Paid firewarden's bill, \$3.00.

TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP	OFFENDER.	OFFENSE.	SETTLEMENT.
March 4, . . . . .	Pequannock, . . . . .	Erie R. R., . . . . .	Fire set by locomotive, . . . . .	Dropped, township bill too tardy.
March 31, . . . . .	Pequannock, . . . . .	C. H. Hoagland, . . . . .	Called men out to fight fire needlessly, . . . . .	Paid firewarden's bill, \$12.50.
March 4, . . . . .	Rockaway, . . . . .	D. L. & W. R. R., . . . . .	Fire set by locomotive, . . . . .	Dropped, township bill too tardy.
May 3, . . . . .	Rockaway, . . . . .	Sons of Raymond Spicer and William Skews, . . . . .	Children set fire on way to school, . . . . .	Dropped, township bill too tardy.
Dec. 12, 1911, . . . . .	Roxbury, . . . . .	Joseph Whalen and Edward Simmons, . . . . .	Caused fire while hunting, . . . . .	Released with warning.
April 7, 1912, . . . . .	Roxbury, . . . . .	D. L. & W. R. R., . . . . .	Fire set by locomotive, . . . . .	Pending.
April 20, . . . . .	Roxbury, . . . . .	D. L. & W. R. R., . . . . .	Fire set by locomotive, . . . . .	Pending.
April 24, . . . . .	Berkeley, . . . . .	Peter Y. Vedder, . . . . .	Allowed brush fire to escape, . . . . .	Convicted, appeal pending.
April 25, . . . . .	Jackson, . . . . .	Alfred J. Norcross, . . . . .	Burned brush without permit, and allowed fire to escape, . . . . .	Released with warning.
April 24, . . . . .	Lacey, . . . . .	Eugene Peron, . . . . .	Burned brush without permit, and allowed fire to escape, . . . . .	Paid firewarden's bill, \$9.00.
April 7, . . . . .	Lakewood, . . . . .	Fred Frank, . . . . .	Allowed brush fire to escape, . . . . .	Dropped, township bill too tardy.
Dec. 22, 1911, . . . . .	Little Egg Harbor, . . . . .	Fred Zimmerman, . . . . .	Burned brush without permit, . . . . .	Released with warning.
April 7, 1912, . . . . .	Manchester, . . . . .	New Jersey Central R.R., . . . . .	Fire set by locomotive, . . . . .	Pending, claim submitted.
April 28, . . . . .	Manchester, . . . . .	Pennsylvania R. R., . . . . .	Fire set by locomotive, . . . . .	Pending, claim submitted.
May 4, . . . . .	Manchester, . . . . .	New Jersey Central R.R., . . . . .	Fire set by locomotive, . . . . .	Pending, claim submitted.
May 4, . . . . .	Manchester, . . . . .	New Jersey Central R.R., . . . . .	Fire set by locomotive, . . . . .	Pending, claim submitted.
May 5, . . . . .	Manchester, . . . . .	New Jersey Central R.R., . . . . .	Fire set by locomotive, . . . . .	Pending, claim submitted.
May 22, . . . . .	Manchester, . . . . .	New Jersey Central R.R., . . . . .	Fire set by locomotive, . . . . .	Pending, claim submitted.
June 13, . . . . .	Manchester, . . . . .	New Jersey Central R.R., . . . . .	Fire set by locomotive, . . . . .	Pending, claim submitted.
July 7, . . . . .	Manchester, . . . . .	New Jersey Central R.R., . . . . .	Fire set by locomotive, . . . . .	Pending, claim submitted.

TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
April 13, .....	Plumstead, .....	Ernest Schenkers, .....	Burned brush without permit,	Released with warning.
April 6, .....	Passaic County— Pompton, .....	Erie R. R., .....	Fire set by locomotive, .....	Dropped, township bill too tardy.
April 6, .....	Pompton, .....	Erie R. R., .....	Fire set by locomotive, .....	Dropped, township bill too tardy.
July 11, .....	Pompton, .....	Erie R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
Nov. 4, 1911, ..	West Milford, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Dropped, township submitted no bill.
Nov. 21, 1911, ..	West Milford, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$55.00.
April 9, 1912, ..	West Milford, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$64.00.
May 24, .....	West Milford, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$11.00.
May 4, .....	West Milford, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$4.00.
October 30, ...	West Milford, .....	N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Pending.
March 27, .....	Somerset County— North Plainfield, .....	Mrs. Theo. Smith, .....	Burned brush without permit, and allowed fire to escape, ..	Released with warning.
April 15, .....	North Plainfield, .....	Employee of G. T. Hughes	Accidentally dropped lighted torch in dry grass, .....	Paid firewarden's bill, \$23.30.
April 9, .....	Sussex County— Byram, .....	D. L. & W. R. R., .....	Fire set by locomotive, .....	Pending.
July 5, .....	Byram, .....	D. L. & W. R. R., .....	Fire set by locomotive, .....	Pending.



TABLE VII.—VIOLATIONS OF THE FOREST FIRE LAW, 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
April 9, .....	Hardyston, .....	N. Y. S. & W. R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$4.00.
April 10, .....	Hardyston, .....	N. Y. S. & W. R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$1.25.
May 27, .....	Hardyston, .....	N. Y. S. & W. R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$2.25.
July 4, .....	Hardyston, .....	N. Y. S. & W. R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$3.75.
July 6, .....	Hardyston, .....	N. Y. S. & W. R. R., ...	Fire set by locomotive, .....	Pending, claim submitted.
August 5, .....	Hardyston, .....	N. Y. S. & W. R. R., ...	Fire set by locomotive, .....	Pending, claim submitted.
October 17, ...	Hardyston, .....	N. Y. S. & W. R. R., ...	Fire set by locomotive, .....	Pending, claim submitted.
July 23, .....	Hopatzong, .....	Henry I. Britton, .....	Burned brush without permit,	Released with warning.
April 9, .....	Warren County— Knowlton, .....	D. L. & W. R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 11, .....	Knowlton, .....	D. L. & W. R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
June 27, .....	Knowlton, .....	N. Y. S. & W. R. R., ...	Fire set by locomotive, .....	Pending, claim submitted.
June 30, .....	Pahaquarry, .....	N. Y. S. & W. R. R., ...	Fire set by locomotive, .....	Paid firewarden's bill, \$10.00.

A year ago the record showed 10 cases from 1910 to be settled, all of which are now disposed of. Of the 109 violations in 1911 that fell as a legacy to 1912, there are now but 12 left to be adjusted. (See Tables VIII and IX and summary in Table VI) All these are railroad claims on which settlement is looked for shortly without further attention, save in one instance where the case may be taken into court. There still remain four cases from previous years, and one in the current year, in which the violator by leaving the State has escaped the law. It is again emphasized, as last year, that while these cases should not properly be charged against the unfinished business of the service, there is no intention to permit them to lapse. In some, if not all, of these cases it is presumed that the offender will return and be penalized later, as happened this year in one instance, when a violator who had taken up his residence in Philadelphia was found in New Jersey, tried and convicted.

The attitude of the railroads again gives evidence of their belief in the work of the Service. Settlement of expenses for putting out fire is readily made in each case if there is reasonable ground to believe a locomotive set the fire, and if claim is made promptly enough to allow the company to verify the facts. So long as the roads continue their co-operation with the service, and unless gross carelessness or willful disregard for forest interests is shown, this treatment of the situation seems the most equitable. Of 207 railroad violation claims this year, 72 have been paid and 15 dropped because the township's bill was too late to permit of making a claim. Final disposition of most of the 120 claims still unsatisfied only awaits the next regular date of settlement under an agreement with several of the railroads by which payments are made periodically instead of individually for each case as submitted.

A total of \$1,312.19\* in penalties was collected in 1912, \$944.85 from the railroads and \$367.34 from elsewhere. Of this latter sum the larger portion was paid by 19 individual offenders with one other case in which a gravel company settled for fighting a fire set by its engine. These sums are returned in every instance to the townships involved in such a way that they and the State are relieved of the whole expense of fighting the fires.

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\*Of this amount \$144.35 was received too late to be included in the financial statement of the year (See p. 14), but was paid on October 31.

## REPORT OF THE FOREST COMMISSION.

TABLE VIII.—VIOLATIONS OF THE FOREST FIRE LAW, 1911. ACTION IN 1912.

DATE.	COUNTY AND TOWNSHIP	OFFENDER.	OFFENSE.	SETTLEMENT.
March 24, .....	Atlantic County—			
April 27, .....	Buena Vista, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
May 2, .....	Buena Vista, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 11, .....	Buena Vista, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$6.00.
	Buena Vista and Franklin (Glouc.) ..			Paid fine, \$25.00, and costs, \$4.50.
May 25, .....	Buena Vista, .....	Ulderico Cavoli, .....	Allowed brush fire to escape, ..	Claim withdrawn.
August 10, .....	Buena Vista, .....	New Jersey Central R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$6.00.
October 27, .....	Buena Vista, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$4.00.
April 28, .....	Buena Vista, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	
	Egg Harbor and Hamilton, .....			
May 23, .....	Egg Harbor, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bills, \$23.00.
April 12, .....	Folsom, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
August 6, .....	Folsom, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$4.00.
May 2, .....	Galloway, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$10.50.
May 7, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
May 12, .....	Galloway, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$25.50.
May 25, .....	Hamilton, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
		Vincenzo Giocolne, .....	Burned brush without permit and allowed fire to escape, ..	
June 9, .....	Hamilton, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, fled jurisdiction.
June 10, .....	Hamilton, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
May 1, .....	Hammononton, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$7.40.
July 6, .....	Hammononton, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
July 24, .....	Hammononton, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
August 24, .....	Hammononton, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
October 27, .....	Hammononton, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
				Dropped, township's bill too tardy.
April 29, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 29, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$7.20.
May 15, .....	Mullica, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.

# FIREWARDEN'S REPORT.

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TABLE VIII. VIOLATIONS OF THE FOREST FIRE LAW, 1911. ACTION IN 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
June 2, .....	Mullica, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Paid firewarden's bill, \$4.20.
April 7, .....	Weymouth, .....	John Doherty, .....	Allowed brush fire to escape, ..	Paid firewarden's bill, \$2.60.
April 26, .....	Weymouth, .....	George Alberton, .....	Allowed brush fire to escape, ..	Dropped, insufficient evidence.
May 14, .....	Weymouth, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.
April 18, .....	Bergen County— Oakland Borough, ....	N. Y. S. & W. R. R., ....	Fire set by locomotive, .....	Paid firewarden's bill, \$28.40.
October 29, ....	Oakland Borough, ....	N. Y. S. & W. R. R., ....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.50.
July 16, .....	Burlington County— Pemberton, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Paid firewarden's bill, \$55.00.
July 16, .....	Shamong, .....	New Jersey Central R.R., ..	Fire set by locomotive, .....	Paid firewarden's bill, \$30.20.
August 22, .....	Shamong, .....	New Jersey Central R.R., ..	Fire set by locomotive, .....	Paid firewarden's bill, \$8.75.
May 11, .....	Tabernacle, .....	Ethelbert Haines, .....	Allowed brush fire to escape, ..	Paid fine, \$50.00.
Aug. 12, .....	Woodland, .....	Edward Tice, .....	Allowed brush fire to escape, ..	Paid firewarden's bill \$6.00.
May 18, .....	Camden County— Chesilhurst Borough, .	Harry Loudon, .....	Burned brush without permit,	Pending, fled jurisdiction.
May 3, .....	Clementon, .....	James M. Cooper, .....	Allowed brush fire to escape, ..	Pending, fled jurisdiction.
March 24, ....	Waterford, .....	New Jersey Central R.R., ..	Fire set by locomotive, .....	Paid firewarden's bill, \$5.05.
May 25, .....	Waterford, .....	B. Butcher, .....	Carelessly threw away lighted match, .....	Paid \$5.00 on account of fine.
July 29, .....	Waterford, .....	New Jersey Central R.R., ..	Fire set by locomotive, .....	Paid firewarden's bill, \$ .30
August 3, ....	Waterford, .....	New Jersey Central R.R., ..	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
February 27, ..	Winslow, .....	New Jersey Central R.R., ..	Fire set by locomotive, .....	Paid firewarden's bill, \$5.00.
March 11, ....	Winslow, .....	New Jersey Central R.R., ..	Fire set by locomotive, .....	Paid firewarden's bill, \$7.00.
March 23, ....	Winslow, .....	New Jersey Central R.R., ..	Fire set by locomotive, .....	Paid firewarden's bill, \$8.00.
April 11, .....	Winslow, .....	Atlantic City R. R., ....	Fire set by locomotive, .....	Paid firewarden's bill, \$4.00.
May 14, .....	Winslow, .....	Pennsylvania R. R., ....	Fire set by locomotive, .....	Pending, claim submitted.

## REPORT OF THE FOREST COMMISSION.

TABLE VIII. VIOLATIONS OF THE FOREST FIRE LAW, 1911. ACTION IN 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
May 29, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
May 29, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
May 29, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
May 30, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
June 2, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
June 16, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
June 16, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
June 17, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
July 6, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
July 6, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
July 6, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
July 6, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
July 7, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
July 7, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
July 8, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$8.00.
July 10, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
July 11, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$1.00.
July 11, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
August 6, .....	Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
Cape May County—				
August 10, .....	Middle, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
August 10, .....	Middle, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
August 11, .....	Middle, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
March 21, .....	Upper, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$12.00.
March 22, .....	Upper, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$17.00.
Cumberland County—				
May 5, .....	Commercial, .....	New Jersey Central R.R. .....	Fire set by locomotive, .....	Paid firewarden's bill, \$4.00.
May 6, .....	Landis, .....	Mark P. McFadden, .....	Allowed brush fire to escape, .....	Paid firewarden's bill, \$13.15.

# FIREWARDEN'S REPORT.

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TABLE VIII. VIOLATIONS OF THE FOREST FIRE LAW, 1911. ACTION IN 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
May 4, .....	Maurice River, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Dropped, township's bill too tardy.
May 14, .....	Maurice River, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Dropped, township's bill too tardy.
May 25, .....	Maurice River, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.
April 13, .....	Millville, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
May 11, .....	Gloucester County— Franklin, .....	John Eckbold, .....	Burned brush without permit, and allowed fire to escape, ..	Paid firewarden's bill, \$8.70.
April 25, .....	Middlesex County— East Brunswick, .....	Fred Richter, .....	Burned brush without permit, and allowed fire to escape, ..	Paid firewarden's bill \$18.00,
May 4, .....	East Brunswick, .....	Robert Huebner, .....	Allowed brush fire to escape, ..	Pending.
May 3, .....	Sayreville, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Dropped, township presented no bill.
May 3, .....	Sayreville, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Dropped, township presented no bill.
May 5, .....	South Brunswick, .....	Elias Dobin, .....	Burned brush without permit, and allowed fire to escape, ..	Paid firewarden's bill, \$5.30.
March 25, .....	Monmouth County— Atlantic, .....	New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$8.50.
April 26, .....	Atlantic, .....	New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$68.50.
April 26, .....	Howell, .....	New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$39.00.
March 22, .....	Morris County— Hanover, .....	G. Meiners, .....	Allowed clearing fire to escape, ..	Dropped, insufficient evidence.
May 7, .....	Roxbury, .....	D. L. & W. R. R., .....	Fire set by locomotive, .....	Pending, claim submitted.

## REPORT OF THE FOREST COMMISSION.

TABLE VIII. VIOLATIONS OF THE FOREST FIRE LAW, 1911. ACTION IN 1912.—Continued.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
May 25, .....	Ocean County— Berkeley, .....	Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$6.00.
April 27, .....		James D. Holman, .....	Allowed clearing fire around cranberry bog to escape, .....	Paid firewarden's bill, \$39.95.
June 1, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.90.
Nov. 10, 1910, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$1.00.
Nov. 16, 1910, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
March 22, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$5.00.
March 23, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$9.00.
March 26, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
April 2, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$6.00.
April 7, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$5.00.
April 13, .....		Pennsylvania R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
May 6, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$1.00.
May 22, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$5.50.
May 23, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$11.00.
July 23, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$7.00.
August 19, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$5.00.
June 1, .....		New Jersey Central R.R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
May 5, .....	Sussex County— Byram, .....	Dana Padgett, .....	Careless with matches, .....	Convicted fled jurisdiction.
April 7, .....		N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Pending, claim suspended.
May 7, .....		N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.25.
April 1, .....		N. Y. S. & W. R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$7.00.
May 6, .....		Thomas Mann, .....	Burned brush without permit, and allowed fire to escape, .....	Convicted, appeal pending.



# FIREWARDEN'S REPORT.

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TABLE IX. VIOLATIONS OF THE FOREST FIRE LAW, 1910. SETTLED IN 1912.

DATE.	COUNTY AND TOWNSHIP.	OFFENDER.	OFFENSE.	SETTLEMENT.
October 18, ...	Atlantic County— Egg Harbor, .....	Lewis Albezet, .....	Allowed brush fire to escape, ...	Paid firewarden's bill, \$8.00, and costs of collecting \$4.50.
April 22, .....	Hamilton, .....	F. M. Hendricks, .....	Allowed brush fire to escape, ...	Pending, fled jurisdiction.
August 13, ...	Camden County— Winslow, .....	Atlantic City R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$16.25.
May 26, .....	Middlesex County— East Brunswick, .....	Jacob Swiller, .....	Burned brush without permit, and allowed fire to escape, ...	Prosecuted fined \$50.00 and costs, \$13.30.
October 12, ..	Morris County— Jefferson and Sparta, ..	New Jersey Central R.R. and Tuckerton R. R., .....	Fire set by locomotive, .....	Claim withdrawn.
October 3, ....	Ocean County— Manchester, .....	New Jersey Central R.R.	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
March 30, ....	Union, .....	Tuckerton R. R., .....	Fire set by locomotive, .....	Dropped, township bill too tardy.
April 15, ....	Passaic County— Pompton, .....	Erie R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$3.00.
April 15, ....	Pompton, .....	Erie R. R., .....	Fire set by locomotive, .....	Paid firewarden's bill, \$2.00.
April 2, ....	Sussex County— Sparta, .....	New Jersey Central R.R.	Fire set by locomotive, .....	Paid firewarden's bill, \$4.00.



## FEDERAL CO-OPERATIVE FIRE PATROL.

Continuing the assistance first offered in July, 1911, the Federal Government placed \$2,000 at the disposal of the Commission for 1912 to maintain a fire patrol in North Jersey under the so-called Weeks Law, upon the same terms as those fixed a year ago. From the experience gained in the fall of 1911, it was decided that with the amount available, the best results could be obtained, not by an attempt to control the whole area for a short time, but by a continued close watch upon certain local danger points. For this it was possible to use several of the men employed last year and thereby secure the benefit of their experience and interest. During May four patrolmen and one look-out were on duty along some of the most dangerous railroad exposures for the purpose, first of reducing the number of fires escaping from these places and then of finding out just how great the responsibility of the railroads might be from even one small locality. This patrol was maintained until October 1 with patrolmen varying in number from 4 to 6. That the expense incurred by both Government and State was justified is evidenced by the fact that these few patrolmen extinguished an average of 18 fires per month, while in July alone there were 35 fires put out. On October 1, this organization was enlarged to a patrol of 8 men; for the fall season their work was laid out on lines quite similar to those of 1911, with the intention of assuring as great a measure of security as possible from careless sportsmen, nut gatherers and others in the woods. As the sum remaining for use in this work was not large enough to permit a patrol as thorough as last year's, the territory to be covered by each man was necessarily increased. But unlike the patrol of the year before, the service was continuous, not sporadic, and combined road and forest routes instead of traversing the open roads alone. During the two months that this patrol was maintained there were 20 fires reported by the patrolmen, none of which got beyond control. Most of them the patrolmen handled alone, while fire fighters were secured for the rest. The cost to the Federal Government for the summer was \$1,088.50, and for the fall \$888. This expenditure is balanced by the State's outlay for maintaining its regular fire service.

Again there stands out the fact that aside from all practical results obtained upon the ground, this patrol, like that of last

year, has been an important factor in inducing greater care among those who frequent the forests. It is also hoped that the results obtained during the summer will aid in a provision for permanent patrol by the North Jersey railroads along the most dangerous sections of their lines. But aside from this the continuation of such work has aroused an interest in fire control throughout the section that could have been obtained in no other way.

#### RURAL MAIL PATROL.

Through the initial action of the New Jersey Commission, a force of almost 55,000 men has been made available for fire patrol throughout 20 different States. Upon the request of the United States Secretary of Agriculture, in pursuance of a suggestion from the Forest Commission, the Postmaster General issued an order requiring rural mail carriers to serve as forest fire patrol in territory having National or State forest fire protective organizations. This order made available about 300 mailmen in this State and prompt action was taken to insure the greatest measure of co-operation possible between them and the State Fire Service. No organized correlation of these forces has been effected in a movement still so new. However, it is felt that active interest by even a few men so situated will materially strengthen the local grip on the fire situation. If general activity is secured, a great gain will have been made at slight expense to the State, no loss to the mail service and small inconvenience to the mailmen themselves.

#### LOOK-OUTS AND TELEPHONES.

Where fire fighters are available, as they are throughout this State, the most important features in a fire protective plan are constant surveillance and ready communication throughout the territory. To secure the former at a reasonable cost a system of look-outs gives wider scope and more continuous application than any other method. In this State good look-out stations are available to command its whole forest area at far less expense than those successfully operated in many places. With trained and equipped watchers on a dozen towers properly placed, few fires could start without being promptly discovered and accurately

located. But the detection and location of a fire is of no value unless fire fighters can be speedily summoned. To do this effectively over an area of any extent the telephone is essential, yet, in sections where look-outs are most necessary telephones are rare. For this reason the Commission is unable to establish stations at most of the points where they should be.

The number of wardens within reach of a telephone is, however, increasing yearly and one handicap to lookout installation is thereby growing less. The Commission is endeavoring further to remedy the lack by actual telephone construction (see p. 64) and by a constant effort to induce private interests to build lines. Such improvements come slowly, but it is hoped that in the ensuing year the first step may be made toward providing permanent fire control of this nature.

#### PRIVATE AND LOCAL CO-OPERATION.

Though the Forest Commission has always sought to enlist the co-operation of property owners in the protection of their own holdings, this effort has necessarily been subordinated to the demand for an efficient public service. However, the fire service has now reached a stage where this side demands and can be given more attention. There are within the State many large forest holdings in private or corporate hands, whose owners' dependence on fire control is great. It is felt that the equipment of their employees for fire fighting and patrol, or the installation of look-outs and telephones, properly rests on the owner. Nevertheless, where such service can be made of wider use and its permanence be assured, the State will gladly share the cost with the owner.

In many localities where regular fire warden service is not justified, co-operation between the Commission and local fire or police officials would make the fire law applicable to isolated and suburban areas. Requests for such joint action always receive careful attention.

The appreciation of the Fire Service is expressed to the Fish and Game Commission for placing the following effective forest fire warning notice on this year's game chart: "Every Forest Fire Destroys a Game Cover. Be Careful Not to Cause Any."



**Fig. 7. Pine Re-establishing Itself After Logging and Fire.**



**Fig. 8. The Same Area Five Years Later. Note How Trees Have Grown Under Protection Alone. Bass River Reserve.**



## THE CARE OF ROADSIDES.

A year ago emphasis was laid on the unnecessary menace to New Jersey's forest land created by the prevalent condition of many public roadsides. Although without authority to insist on any remedy for this condition, the Forest Commission has endeavored to bring the matter to wider attention among those who have control. To this end a letter was sent to each township having enough woodland to justify it pointing out that an unkempt condition of the road borders creates a danger to the woodland and indicating the particular legislation (P. L. 1885, p. 36 and P. L. 1900, p. 284) under the authority of which it lies within a township committee's power to find a remedy. In a number of townships this appeal found ready support, although it is regrettable that so large a proportion of the local governing bodies still permit the former laxity in this respect.

In addition, new legislation has made it possible to use State-aid highways in the protection of the forests. A clause (Secs. 4 & 29, Chap. 395, P. L. 1912) gives to the State Road Commissioner authority to require that all roads hereafter constructed through the wooded sections shall be effective fire breaks. With the co-operation of the Forest Commission, specifications have been prepared for such construction as will render the roads more effective for protection to the woodlands.

## PENNSYLVANIA RAILROAD'S ENFORCEMENT:

Probably the most significant single effort to secure forest protection is the action of the Pennsylvania Railroad embodied in instructions issued to its employees on February 1, 1912. So complete and so emphatic are these instructions that a copy, much reduced in size, is reproduced. In the last paragraph the railroad's breadth of attitude is particularly emphasized. See opposite

## RAILROAD FIRELINES.

The status of the law commonly known as the Railroad Fireline Law, 2 Comp. Stat. p. 2239, has not been altered, so far as its operation is concerned.

Although the temporary nullification of the law, (See p. 8) is hampering the construction and maintenance of the firelines to a large degree, it is again cheering to note that the railroads, more particularly the New Jersey Central, continue their policy of voluntary fireline construction. An unfortunate feature in connection with the situation is, however, that along some railroads, and some sections of others, existing lines have been neglected. This failure to maintain construction already done is most unfortunate, both because it is a direct loss of expensive work and also because on those lines that have been allowed to grow unkempt at least five fires have started and burned from them to adjoining woodland. There is no case recorded in which a fire has crossed a well made and properly maintained fireline.

There have been again one or two instances in which a fire has started from a spark thrown clear beyond the fireline, but as heretofore these cases are so rare and occur under conditions so unusual, as to wind and atmosphere, that they in no way argue against the value of the fireline in controlling railroad fires.

The outlook for next year's work is highly encouraging in that three roads, the Atlantic City, New Jersey Central and Pennsylvania, have already indicated their desire to make appreciable additions to their mileage of firelines and the latter its intention to put into first class shape the total mileage that is now completed along its lines.

Although these features do encourage, the situation is still one upon which the Fire Service looks with concern. That firelines

# THE PENNSYLVANIA RAILROAD COMPANY

PHILADELPHIA, BALTIMORE & WASHINGTON RAILROAD COMPANY  
NORTHERN CENTRAL RAILWAY COMPANY  
WEST JERSEY & SEASHORE RAILROAD COMPANY

## THE PREVENTION AND EXTINGUISHMENT OF FOREST AND GRASS FIRES

In order to prevent as far as possible the occurrence of Forest and Grass Fires and eliminate the damage which they cause, stringent measures for their prevention and suppression must be taken during the season of fire danger before vegetation starts in the spring and after it dies in the fall, and during periods of dry weather at any time. Beginning about March 1st and October 1st of each year, special vigilance must be exercised until the season of fire danger is passed, and Supervisors, track foremen, and others must be governed by the following regulations:

1. Trackmen shall burn old ties and other debris at such time and in such places as will not result in any spread of the fire.

2. Enginemen shall use every precaution against fire and not permit burning waste, hot cinders, or any other inflammable material to be thrown or dropped from the engine; clean the ash pan or front end only at points specially designated; and report promptly any defects in the devices on locomotives designed to prevent the throwing of sparks or dropping of hot coals.

3. Trainmen shall place fusees only where there is no likelihood of fire spreading from them.

4. Trackmen shall promptly extinguish all fires which start on or near the right-of-way, and render all possible assistance in fighting fires whether on private land or on property owned by the Company.

5. Trainmen shall notify the first section gang passed and report to the Superintendent from the nearest telephone or telegraph, the existence of fires which evidently have not previously been discovered or had no steps taken toward their extinguishment. Freight trainmen shall, wherever practicable, stop and extinguish small fires, since waiting to report them might give them time to get beyond control. Other employees will take the necessary steps to notify the Superintendent and trackmen of such fires as come to their notice.

6. Supervisors shall have all grass, brush, and debris within the right-of-way line opposite the forest plantations, and, when feasible, as far back as the plowed fire line (which will be 100 feet from the track wherever possible), burned in the fall of each year as soon as the grass has died down enough to make this possible. Wherever practicable, the same plan of burning shall be followed on the right-of-way where there are no forest plantations. This burning shall be done with extreme care, and only when there is a calm or when the wind is blowing toward the track; and sufficient men shall be kept on the work to prevent the fire spreading to adjoining property.

7. If a large fire occurs on land not owned by the Company, the Supervisor shall notify the nearest State Fire Warden. In case he cannot be located and the fire is in Pennsylvania, notify the Commissioner of Forestry at Harrisburg; if it is in Maryland, notify the State Forester at Baltimore; if it is in New Jersey, notify the State Forester at Trenton. The names and addresses of the Fire Wardens for the various districts will be furnished prior to each season of fire danger.

8. Operators shall transmit without charge, as Company business over Company lines, all messages relating to forest, woodland, or grass fires which are on or near Company property or are likely to affect Company property.

### GENERAL INSTRUCTIONS

Remember that the most effective means of controlling forest fires is to prevent them. Use great care in the use of fire in forests or grass lands. Do not throw burning matches or tobacco where they can set fire, and impress others with the necessity for following these precautions.

If a fire starts, take prompt and energetic action to prevent its getting beyond control, and make use of the telephone, telegraph, or other means of getting help when it is needed. Plan definitely what action to take and how much help will be needed; a few men properly directed will accomplish much more in extinguishing a fire than a large force working at random.

After a fire is controlled, guard it until it is entirely extinguished. Not even a spark should be left where fire might start. Fires which have been thought to be under control have broken out afresh with a change in the wind. It is safe to watch a woods fire twenty-four hours after it is seemingly out.

Fight light grass fires and ground fires in the woods with green boughs, brooms, wet burlap, or by throwing on fresh dirt. If the line of flame is too hot for this, try scraping or digging a trench around the fire. Take advantage of natural vantage points, such as rock outcrops, streams, roads, etc., and connect them with lines or trenches along which the mineral soil is exposed. In severe fires start back-firing toward the approaching main fire from a break or line of some kind. For the ordinary ground fire the tools most readily available—the axe, hoe, shovel, water bucket, and burlap bag—are usually sufficient.

The fundamental object in suppressing forest fires is to protect property, particularly buildings, fences, timber, forest plantations, etc. It should also be remembered that the suppression of fire is an essential step in the conservation of our forest and water resources. The various States have fire laws and organizations to fight them. The States alone, however, cannot at present suppress all fires, and it is obviously the duty of all land-owning individuals and corporations to help create a public sentiment adverse to fires and to take all possible action in their power to curb the fire evil.

SUPERINTENDENT.



are efficient is assured both by results and by the desire of the railroads most concerned to continue their construction, though under no obligation to do so. The lines thus made are not satisfactory in all respects, however, because the objection of a single small holder of woodland causes a break which greatly lessens the value of a line by leaving a spot from which fire can be communicated to adjoining properties. The situation on the individual railroads is as follows:

*Atlantic City Railroad.*

This road has now completed 76 miles of fireline, all of which has been recleared within the last year, though no new construction has been added. This leaves approximately 84 miles still to be constructed to complete the protection of the entire system as at first planned. Of this, it is intended to make about 6 miles during the coming year.

*Lehigh and Hudson River Railroad.*

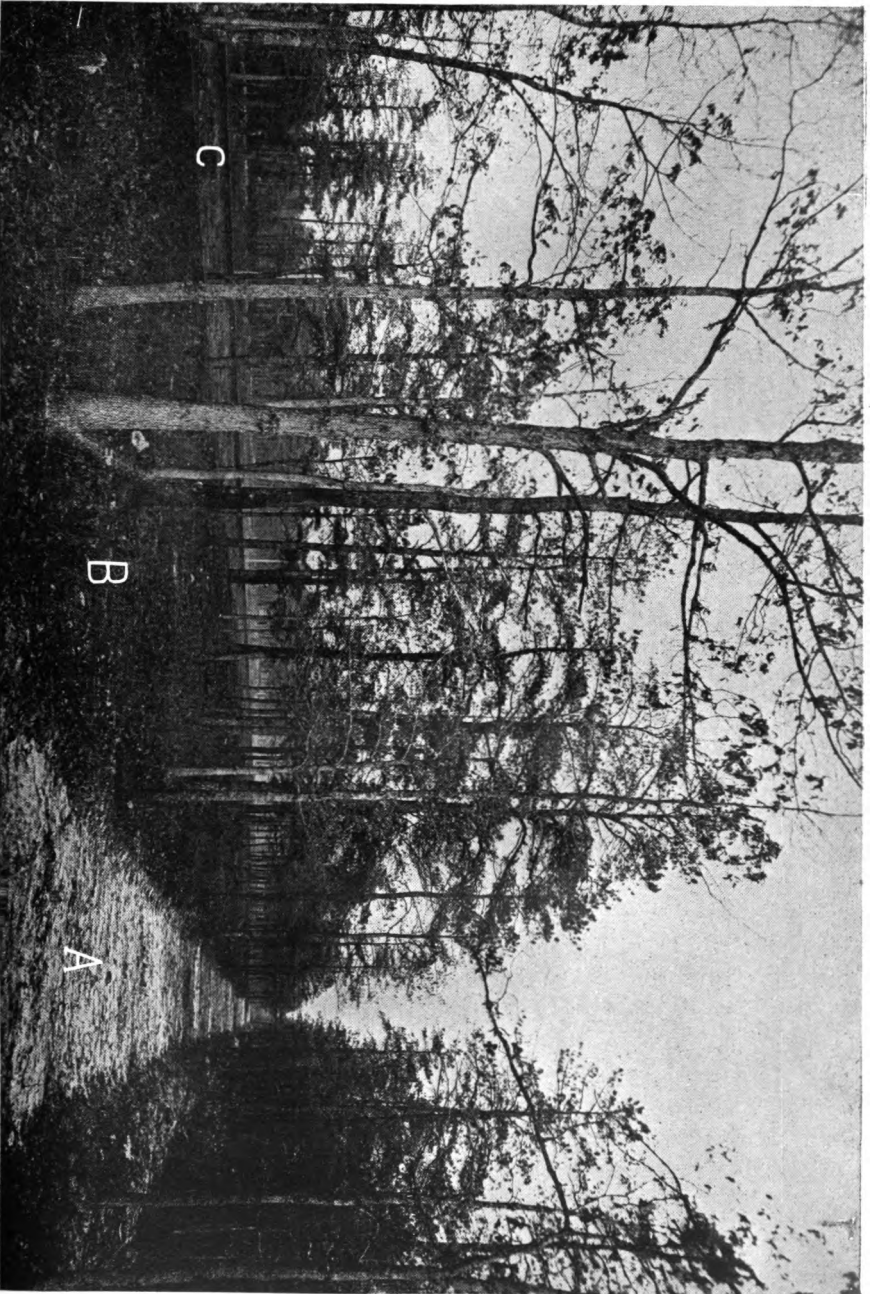
No new construction has been added along this line, but the exposure is slight and is partially covered now by three-eighths of a mile of fireline, leaving not more than half a mile still to be constructed.

*Mount Hope Mineral Railroad.*

The entire distance required to be constructed along this road, one and one-half miles, having been completed in 1910, no new work was done during this year, although the old fireline has been maintained.

*New Jersey Central Railroad.*

During 1912 this railroad has increased its firelines by 8 miles, making the total distance now protected 74 miles and leaving 202 miles of the originally estimated construction still to do. Of this remainder 28 miles more were partially finished in 1912. The old lines have been kept up throughout their whole length. Next year this road intends to complete a fireline from Lakehurst to Landisville on the west side of the track, approximately 50 miles. This will furnish firelines along this entire strip of road on both sides,



**Fig. 9. A Railroad Fireline: A. Safety Belt, Cleared to Bare Soil. B. Danger Zone, Forest Simply Thinned and Cleaned up. C. Railroad Tracks.**



since the east side has already been covered, with the exception of a few short reaches where private interests object.

*Pennsylvania Railroad.*

No new fireline construction is reported from these lines this year and much of that formerly installed, about 75 miles, has been permitted to lapse. Next year a new fireline is planned to cover about 34 miles, with a thorough renewal of all previous construction.

*Raritan River Railroad.*

No new construction of firelines along this road has been done and save on a very small portion probably none will be installed, because conditions have so changed since the first enforcement of the fireline law that the original exposure is now materially reduced, if not wiped out.

*Tuckerton Railroad.*

No new firelines along this road are reported for 1912 and none are planned for the coming season.

*New York Central and Hudson River (West Shore) Railroad.*

No new construction along these lines was asked for and no new work has been done. The exposure is, however, continually growing less as the small amount of woodland that required protection at the outset is rapidly reduced.

*Wharton and Northern Railroad.*

As was described in last year's report, this road maintains a fire car following the few trains that run over the road, in place of constructing and maintaining firelines at a high cost. This year again the wisdom of the arrangement is evidenced by the fact that no fires have been reported from along the railroad. If some have started they have been controlled immediately by this railroad patrol without calling on the Fire Service.

*Other Railroads.*

The Delaware, Lackawanna and Western, the New York, Susquehanna and Western, the Erie and the Lehigh Valley Railroads have made practically no contributions to fireline construction, though the latter did make three miles in 1910. It is especially unfortunate that the two former companies have made no effort to follow the example of the roads that operate in South Jersey.

The total length of effective fire lines now in the State is approximately 250 miles.

## Report of the State Forester.

ALFRED GASKILL.

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### SUMMARY.

New Jersey must induce forest owners to practice forestry—Curtail cordwood and increase lumber production.—Enough forest is being planted.—Shade trees of increasing importance.—Many new Shade Tree Commissions.—County roads may now be tree-bordered.—Shade Tree Book for all who want one.—State aid.—State forest reserves growing in value.—Fires on reserves few, products increasing, tree planting unnecessary.—Tree pests.

The Forest Commission's policy of giving fire control precedence over all other lines of effort is proving its own advocate. As the fires cease forest property becomes more secure and owners see some reason in undertaking forest management. Our effort is, and must be, directed chiefly towards inducing private owners to practice forestry because the State cannot expect to own or control more than a small fraction of the two million acres that comprise our total woodland. The map, Fig. 1, indicates the magnitude of our interest, yet if we have forestry at all it must be forestry supported by the people who own the forests.

The strongest inducement held out to forest owners who would look for good returns from their investment is found in the fact that in this country no lumber has yet been sold at the cost of production, except perhaps small quantities in strictly local markets. This means that lumber prices must advance until timber crops replace the virgin store upon which the country is now drawing. That an owner who gets a forest started while land values and forest values are low has an advantage needs no demonstration.

New Jersey's forestry work concerns itself largely with the future, with such effort as shall convert our burned and battered forest remnants to highly productive forests. And this aim is helped, not hindered, by the interest of many owners in forest

esthetics. It is as easy to make a woodland attractive, while developing it commercially, as it is to neglect either its utility or its inherent beauty. In a settled community a forest park is more normal than a wild woodland. Thus is it explained why estate owners are the first to take up forestry and why so much of the effort of the Forest Commission is devoted to them. Forestry that deals solely with debit and credit is still subject to uncertainties: it will gain a place with increased security and such demonstrations as the estates and the forest reserves afford.

As means to bring about the practice of forestry the following, apart from fire control which always has first consideration, are engaging attention:

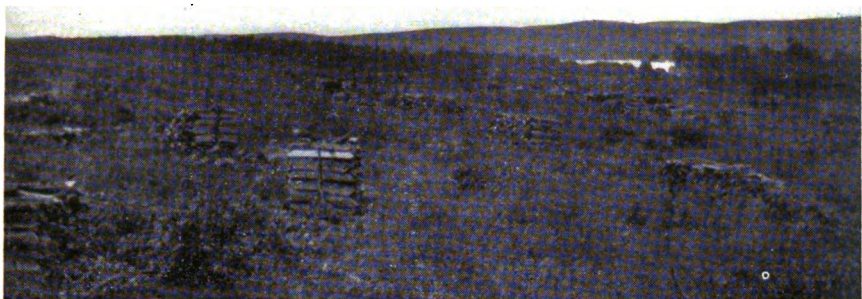
*Forest management*, on private lands and on the State reserves—see pp. 59, 61.

*Forest planting*—See pp. 60, 65. In this connection a series of experiments is being carried on, partly in co-operation with the United State Forest Service and with private owners, to determine the best species and the best methods for our territory. Some interesting results have already been obtained.

*Investigations in wood utilization and wood values.* These include a complete study of the wood-using industries of the State, their needs, sources of supply, etc., now being made in co-operation with the United States Forest Service. The report, to be published during the coming year, will show how much and what kinds of wood the State uses, where the shortages and wastes are, and how to correct them.

*Lumber Directory.* Co-ordinately with this an effort is making to bring wood users into communication with wood producers. Much loss is occasioned by the inability of one who has timber to sell to find a market for it. A classified list of buyers now enables us to put the would-be seller of almost any kind of wood into communication with those who use it. Correspondence with either buyers or sellers is invited—upon the distinct understanding, however, that all arrangements are made by and between the parties concerned. The only interest of the Forest Commission is to promote utilization.

Other lines of investigation, planned to acquire the knowledge that is sure to be needed as forestry progresses, include the planting



**Fig. 10. A Clear-Cutting Near a Summer Resort. This is wrong from every standpoint. It Sacrifices Growing Trees, Produces Low Value Material (Firewood) Instead of Lumber, and Lessens the Attractiveness of the Locality.**



**Fig. 11. A Heavy Felling in Blighted Chestnut. The Chief Product is Fence Posts and Rails.**





of cottonwoods and other quick growing trees that have value for paper pulp and excelsior, and of willows for making baskets. Several years must pass before anything of value can be said about these efforts.

#### PROGRESS.

The year has seen a notable increase in the number of citizens who want to practice forestry or are looking after the shade trees in their neighborhoods. Though shade tree work, or arboriculture, is not forestry the Forest Commission is charged by law to promote it.

The means by which forest owners are interested and induced to look after their properties are first, protection against fire, and second, showing them how. As reasonable safety is assured to a locality interest in forestry awakens and the opportunity to practice it is given. The day of enthusiasm for a vague abstraction is passing; it must be demonstrated that forestry will pay better than letting the woodlands alone. And, fortunately, an extra dividend can be taken in the form of pleasure. This the public can share with the owner.

An indication of the activity in this direction is found in the statement that during the year improvement fellings and plantations have been made under the direction of the State foresters on 13 properties embracing 1,600 acres. This is in addition to about 25,000 acres that have been under their direction for several years.

#### FOREST MANAGEMENT.

In New Jersey this means finding ways to develop the "second growth" forest, which is practically all we have, and make it continuously productive. In North Jersey the necessity of removing trees affected with the chestnut blight, (see p. 75) undoubtedly has induced many owners to think of forestry and to appeal to the Forest Commission. In several cases it was possible to direct necessary fellings so that the growing trees of other species than chestnut were saved. By then planting evergreens in the gaps new forests were established which, in time, may easily be more attractive and valuable than the old.

*Markets.* The chief difficulty encountered when a forest is to

are always salable, as are oak railroad ties; chestnut poles and posts are in demand but ties are often slow. In the neighborhood of Morristown the most profitable use of chestnut is for post and rail fences; Fig. 11. But every cutting, South or North, yields much cordwood—often a greater volume than of anything else. Efforts have been made and are still making, to find a use for this but thus far with no great success. Chestnut is not always marketable as fuel and there is more than enough oak for all needs within the economic delivery range. As a rule pine will bear a higher freight charge than any hardwood but hickory. The solution of this problem apparently lies in the establishment of some new industry, like a wood-alcohol still, in the heart of our northern forests. In South Jersey it will come of itself when the fires cease and the pine trees are allowed to grow to timber size. In any case, no reason can be found for making cordwood the main crop. Tops and thinnings always furnish enough where forests are well managed.

#### FOREST PLANTING.

Our policy with respect to forest planting also differs from that of most States. We find it unnecessary to plant trees except in a small way. Bad as the fires have been, reckless the chopping, deserts like those of the Adirondacks, the Lake States, and the West are unknown with us. There are hillsides in North Jersey that never should have been cleared, they will yield more in timber than in farm crops or in pasture. These the owners are recommended to plant, usually with evergreens, which are preferred chiefly because they produce more and better lumber (softwood) in a given time, but partly also because the landscape needs them. About 100,000 young trees have been planted this year under the direction of the State foresters. Not less than 300,000 have been planted within five years. Notable instances of this are found on the water reserves belonging to the cities of Newark and East Orange. The former has set out upwards of 100,000; the latter, working with larger plants, has set out 10,000 and has in nursery 75,000 young trees to be planted within the next three years.

In South Jersey there is even less opportunity to make commercial plantations. The clearings are practically all on the better



**Fig. 12. Planting a Forest. Bass River Reserve.**



**Fig. 13. The Same Spot Six Years Later.  
SUCCESSFUL FOREST PLANTING.**



soils and though the land is often given over to neglect, that condition is temporary only. Every acre of agricultural land will be needed before any planted trees could reach maturity. Moreover it would be foolish to plant a forest on cleared land when other land with a forest already started can be bought nearby for less than the cost of planting.

Forestry in New Jersey does not exclude tree planting but subordinates it to fire control, to the development of existing forests, to agricultural needs.

The Forest Commission would like to be informed of the location and character of all forest plantations in the State in order that they may be recorded and become available for silvicultural studies.

### STATE FOREST RESERVES.

The State reserves have not been increased in area but are steadily growing in value—a proof that even the most degraded of our woodlands can and will revive under simple protection and reasonable care. It sounds well to announce that a State is acquiring a great area of public forest, yet, unless the property is actually improved by passing from private to public ownership, the advantage to the people is nothing. Indeed the only justification for assuming control is that the State will do what the individual does not and will develop the forest for public advantage. New Jersey's Forest Commission is therefore wise in holding to its decision to create forest reserves only when they can be used to advance the understanding and practice of forestry by private owners. In general this end will be gained by numerous small reserves, so located that their good condition and careful management will inspire woodlot owners and forest owners to do the right thing with their own. Mount Laurel reserve is the ideal—see page 64, and an effort is now making to secure other suitable tracts.

### PURCHASE OF RESERVES.

This argument in no sense precludes the acquisition of other lands having especial value. Thus this year the legislature was asked for, and made, an appropriation to buy 70 acres lying in an angle of Bass River Reserve. The land was offered at a low price and its purchase would round out the State lines. Unfortunately the

title was found so defective that nothing could be done. It was necessary to cancel also a contract made in 1909 for the purchase of another tract of 112 acres, again because a clear title could not be given.

#### LAND TITLES.

It is apparent that our law is too stringent in respect to the title of wild lands. Lax methods and defective records have created such a general clouding of titles in some sections that it is almost impossible to find a property that is entirely free of some technical defect. That most of these defects can be ignored is evidenced by the fact that properties rejected by the Forest Commission are afterwards bought by individuals and that ordinary transfers are constantly made. The State would run little real risk if the law were so changed that the Attorney General could approve a title of ordinary commercial integrity.

#### WHARTON TRACT.

A project that promises to bring a great tract of forest into the control of the State is that now being considered by the Water Supply Commission to create a water reserve in South Jersey. Though this scheme has for its prime object the utilization of the potable waters of the region it necessarily involves the protection and utilization of the forests. These forests, though of comparatively little present value, are easily capable of being so developed that they will yield after thirty or forty years more than enough to pay the interest on the cost of the property. If New Jersey shall reserve to her people this dual resource, water and forest, she will have gone further in true conservation than any other State.

The forest lands now held by the State are as follows:

#### LOCATION AND AREA OF FOREST RESERVES.

Mays Landing Reserve, Atlantic County, see Map in Report, 1907..	373 acres
Bass River Reserve, Burlington County, see Map in Report, 1907..	1,633 acres
Lebanon Reserve, Burlington County, see Map in Report, 1907...	3,498 acres
Mount Laurel Reserve, Burlington County no Map published....	20 acres
Penn Reserve, Burlington County. See Map in Report 1911....	2,764 acres
Edward C. Stokes Reserve, Sussex County. See Map in Report 1907 .....	5,432 acres
Total, .....	13,720 acres





**Fig. 14. Thrifty Young Forest [needing care] on Stokes Reserve.**



**Fig. 15. Sprout Oak Forest Newly Thinned. This Type in South Jersey is Often Called Scrub Oak, but as Here Shown It needs Only Care to Produce Timber.**





These properties cost but \$45,277, or an average of \$3.30 per acre. In a State like New Jersey therefore they are almost sure to be a good investment, even when the charge for administration and protection is added.

#### COMPENSATION TO TOWNSHIPS.

The communities in which the reserves are located are taken care of by the law (Comp. Stat. p. 2609) providing for the annual payment to the local treasury of two cents for each acre of land held by the State and therefore exempt from tax. The amount is fair in all cases except that of the smallest reserve.

#### TRESPASS.

Trespass in the State forests is practically unknown. In two instances small amounts of wood were cut on Bass River Reserve but it was easily shown that the crossing of a partly obscured line was unintentional. Settlement was made by requiring payment of the market price of the wood. Neither case warranted the imposition of a penalty. The respect that is universally accorded the State's property may be ascribed to the vigorous prosecution of every offender, combined with a liberal policy regarding every reasonable use of the land. That is, the people have perfect freedom on the reserves to hunt, fish or do what they will but they must do no damage nor remove anything of value except wild berries. See Fig. 2.

#### MARKING BOUNDARIES.

Considerable time has been given to making resurveys of some of the reserve boundaries, and to setting permanent corners. This work is slow, but it is important to establish definitely and to mark permanently the boundaries of the land belonging to the State. This work will be continued and in some cases boundaries will be marked by thinning the forest in a belt two rods wide, or by planting belts of exotic trees, instead of by the usual blazes. The purpose of this is to make the lines permanent. A blazed or cleared line is soon obscured by new growth while a "thinned" line becomes more and more distinguishable through the stimulated growth of the favored trees, the suppression of undergrowth and the consequent contrast with the surrounding forest. See p. 66, also Fig. 3.

## FIRE.

The year's record is again good. Only 100 acres burned on the Penn Reserve—the first fire that has touched it since the State came into possession, and a fraction of an acre on the Stokes Reserve. Lebanon escaped entirely for the first time in its history—as a reserve at least. Bass River, Mays Landing and Mount Laurel likewise have not suffered. This satisfactory situation is due only in part to favorable weather conditions. If either of the two fires started had not been discovered quickly and handled energetically it probably would have become serious.

The properties are more secure than they ever have been because more and better fire lines are maintained (Fig. 3) because township wardens as well as reserve wardens are vigilant, and, above all, because the strict enforcement of the forest fire law (see p. 28) is making everybody more careful about fire. A few more years of immunity will carry many of the young pine stands beyond all ordinary danger, for it is the great virtue of our common pitch pine that after early youth it is highly fire-resistant. Fig. 2.

## TELEPHONES.

A measure of protection which the reserves enjoy in common with the forests that surround them is found in the Federal fire patrol—see p. 48, in the postal service patrol, and in the constantly extending telephone service. So important and so valuable is the latter that the Forest Commission felt justified in securing the erection of a line from Chatsworth, Burlington County, to a private cranberry bog on the East Branch of Wading River and contributing \$300 toward the cost. This line, nine miles long, traverses Penn Reserve and brings into communication a section of the State having few inhabitants but much subject to forest fires. To this construction all property owners except one gladly consented and gave free right-of-way. It is worth observing that this objector demanded \$250 for the right to set poles on his land. Of course he did not get it, one sufficient reason, though not the only one, being that a strip of similar land 100 feet wide and as long as the line across his property can be bought in fee simple for \$50. The telephone line was carried around the objector at an additional cost of less than \$40.



**Fig. 16. Dense Sprout Stand [Chiefly Chestnut Oak] Before Thinning. Note Fine Litter of Leaves, Etc.**



**Fig. 17. The Same Stand After Thinning. Note that the Tallest, Straightest, Most Thrifty Trees in Each Group are left to Grow Larger. Also the Low, Clean-cut Stumps.**



**Fig. 18. The Same in the Summer After Thinning. The Crown-cover on the Right-hand Portion is Already Dense Enough; On the Left it is too Thin.**

**PART OF FOREST ON MT. LAUREL BEFORE AND AFTER TREATMENT.**



## SHELTER CABINS.

Another means of helping to control fires is provided by the erection of cabins where tools can be stored and, at need, men find shelter. One is located on Lebanon Reserve and one on Penn Reserve near points from which a good outlook can be had and convenient to the telephone. As no stream is near each is also provided with a pump to furnish water for fighting fire as well as for drinking. Other similar cabins probably will be built from time to time. They cost with equipment about \$150 each.

## FOREST PLANTATIONS.

No new plantations have been made within the year. Those established last year and earlier have been so handicapped by successive droughts that it has been thought advisable to hold up this work for a time and meanwhile to plan for a series of experimental plantings that may be expected to indicate quite definitely what species of trees are best adapted to our conditions. Fortunately we have no reserve land that lacks forest and must be planted to redeem it. The fifty or sixty acres that are cleared give no more ground than is needed for experiments.

## PRODUCT OF THE RESERVES.

Forestry is justifiable when it produces tangible results. Forest reserves must yield an income to the State, in money that represents current interest on the investment, in material that its citizens need, or in improved living conditions—fresh air, pure water, convenient play grounds. The aim of the reserve management is to do all these things. But as often happens the last is apt to be first. No forest as degraded as those on all the reserves but one can be expected to yield much timber for many years; it can, however, soon yield many benefits, as the reserves now do.

On the material side each reserve produces a little: some firewood, a little moss, a few cranberries. The total receipts for the year were \$508.57 though the greater part, \$410.95, came from an improvement cutting of 20 acres on Mount Laurel.

Unfortunately this demonstration cannot be repeated for some time. There is a body of mature pine on Penn Reserve but it must await better transportation facilities before it can be marketed. On the other southern reserves the timber is too young to be cut, or is needed to furnish seed for reproduction. Stokes Reserve carries a great quantity of scrap wood, at least 30,000 cords, which should be got rid of, but thus far it has been impossible to interest any user in the situation. As the timber cutting contract which formed part of the purchase price will expire next spring and the property come under the absolute control of the Forest Commission it may be possible to do something then. This reserve probably is the most valuable that the State possesses, for while it is remote and the forest has been heavily cut there is a great number of vigorous half-grown trees. (Fig. 14). Ten years more of protection, with such improvement fellings as may be found practicable, will develop a considerable volume of merchantable timber.

#### MOUNT LAUREL IMPROVEMENT.

This little reserve of 20 acres carried a forest of hardwoods and pine, 40 years old, that needed attention long before it came into the possession of the State. By an improvement thinning made last winter 45 per cent of the stand was removed at a net profit of not quite \$300. The remainder forest is better than that which was found. The fellings, and the studies that followed them, afforded so good an example of what forestry really does that they were used as the basis of a special bulletin entitled "An Example of Woodlot Forestry." This has been widely distributed and will be furnished anyone upon request.

## SHADE TREES.

"Greater activity and interest than have ever been shown" sums up the shade tree situation. This is evidenced in newly appointed Shade Tree Commissions, in increased appropriations for old commissions and in much individual effort.

The Forest Commission is in close touch with all the more active Shade Tree Commissions and by conferences and periodical inspections aims to help each solve its peculiar problems. The Commission's foresters are always ready to aid as they can the officials of any community.

## SHADE TREE COMMISSIONS.

As a means of measuring the strength of local interest in shade tree work, letters of inquiry were sent to officials in the 180 cities, towns and boroughs, which, by reason of having a population of 1,000 or more, were assumed to be interested. The replies show that no less than 41 communities have established and are maintaining more or less efficiently, a Shade Tree Commission or equivalent agency, and that their combined annual resources are \$85,000. The extent of the activities of these bodies is summarized on pp. 68 and 69.



## SUMMARY OF SHADE TREE COMMISSIONS IN THE STATE AND THEIR ACTIVITIES.

City or Borough.	Commission Appointed.	Appropriation 1912.	Lines of Work Followed.	Special Needs.	Executive.
Allendale, .....	1910	\$ 83.25	Trimming.		William Dewsnap, Sec.
Bayonne, .....	1907 (1)		General care.	More money.	Alex. Christie, Pres. Park Commission.
Belleville, .....	1912	500	Trimming.	More money.	D. S. Tillon, Sec.
Beverly, .....	1912	150	Trimming.	More trees.	J. Fletcher Street, Sec.
Bloomfield, .....	1909	1,700 (2)	Planting, trimming, spraying.	More money.	John A. Rasbach, Sec.
Bogota, .....	1912	159.36	Planting, spraying, trimming.	Money to do work required.	E. A. Gibbons, Sec.
Bound Brook, .....	1911	None.	Spraying, etc., education.		J. G. Fisher, Sec.
Carlstadt, .....	1912	None.	Not yet active.	More trees	Julius Koch, Sec.
Chatham, .....	1909	138.51	Planting, spraying.		H. DeB. Page, Sec.
Dover, .....	1911	1,000 (3)	Spraying and park work.	More money.	P. C. Buck, Pres.
East Orange, .....	1904	7,500	Planting and general care.	More flexible law.	E. H. Bennett, Arborist.
Englewood, .....	(9)		Spraying, trimming, etc.	Provision for planting etc.	
Glen Ridge, .....	1911	1,500 (4)	Spraying, trimming and park work.	More money	Martin T. Baldwin, Sec.
Haddonfield, .....	1911	300	Trimming.	To care for old trees.	Allen Clymer, Sec.
Hasbrouck Heights	1911	400	Trimming, planting.	Guidance to work right.	John Blyth, Sec.
Haworth, .....	1910	75	Trimming, planting.		H. B. Van Dusen, Pres.
Irvington, .....	1911	950 (5)	Trimming, planting.	Larger working fund.	Geo. Jennings, Sec.
Jersey City, .....	1908	47,880	Planting, maintenance, park work.	Better police control, more money	A. T. Hastings, Jr., Sec.
Kearney, .....	1909	2,200	Planting, pruning, spraying.	Authority to extend plantings.	G. W. McClintick, Sec.
Lakewood, .....		500	Planting, pruning, spraying.		A. D. Davis, Sec.
Maywood, .....	1911	100	Trimming.	To replace trees killed by gas.	Ernst Billhuber, Pres.
Montclair, .....	1909	5,450	Spraying, planting, general care.		J. A. Anderson, Sec.



**Fig. 19. A Street Tree Half Killed by Abuse and Neglect. Doctored, It has a chance to Live Many Years. In This Case Filling Was Necessary. [Photo by E. H. Bennett, East Orange].**



**Fig. 20. Fragment of Tree Cleaned and Painted. It Often is Better to Treat a Tree Like This Than to Fill It With Cement. Note Healthy New Growth at Edges.**



**Fig. 21. Street and Sidewalks Newly Made Without Destroying Old Trees. Tree A Stands In the Gutter, Tree B in the Curb Line, Tree C Cuts Into the Sidewalk.**



SUMMARY OF SHADE TREE COMMISSIONS IN THE STATE AND THEIR ACTIVITIES, *Continued.*

City or Borough.	Commission Appointed.	Appropriation 1912.	Lines of Work Followed.	Special Needs.	Executive.
Newark, .....	1904	\$65,000 (6)	Maintenance and improvement.	Enforcement of ordinances, increased appropriations.	Carl Bannwart, Sec.
North Plainfield, ..	1910	325	Spraying, etc., education.	Money to employ skilled labor.	Henry Crofut White, Pres.
Nutley, .....	1912	400 (7)	Spraying, trimming	Money and experience.	E. L. Broadbent, Sec.
Palmyra, .....	1911	200	Spraying, trimming	More money.	J. O. Thilow, Chm.
Passaic, .....	1899	10,000 (6)	Maintenance and improvement.	To develop newly acquired parks.	C. S. Deans, Sec.
Point Pleasant, ...	1910	none	Advisory.	Advice about planting.	Clarence H. Murphy, Chm.
Ridgefield, .....	1910	100	Trimming.	Understandable laws and funds.	Clement B. Davis, Sec.
Ridgefield Park, (8)					
Ridgewood, ....	1912	600 (6)	Spraying, trimming.	Funds.	J. C. De la Cour, Pres.
Riverton, .....					G. W. Griffin, Sec.
Roselle Park, .....	1910	325	Spraying, trimming.	More trees.	Grove W. Phillips, Sec.
Rutherford, .....	1908	1,800 (6)	Maintenance and improvement.	Maintenance and improvement.	William A. Apgar, Sec.
Somerville, .....	1912	900	Not yet active.	Prevention of injuries	Harvey I. Underhill, Sec.
South Orange, ..	1903		Spraying, trimming, etc.		E. N. Bush, Sec.
Summit, .....	(9)				
Verona, .....	1912	100	Spraying, trimming.	Money.	E. L. Mouillesseaux, Pres.
Westwood, .....	1912	200 (6)	Trimming, planting.	How to protect trees against leaky gas mains and electric wires.	B. W. Cloud, Pres.
Woodbury, .....	1910	250 (6)	Trimming.	Money.	E. A. Schutter, Sec.
Wood Ridge, ....	1910	(10)	Planting.	Education of public.	

(1) Powers of Shade Tree Commission conferred upon Park Commission; no separation of accounts.

(2) Four hundred trees planted at cost of property owners.

(3) About \$500 more raised by local effort. Park claims attention with shade trees.

(4) Part devoted to park work. Also planted 300 trees.

(5) Planted 1,100 trees at cost to owners.

(6) Includes appropriation for care of parks and for outlay in tree planting.

(7) Raised by subscription; no appropriation.

(8) Shade Tree Commission extinguished by adoption of Commission Government. Commissioner of Roads and Parks will continue work.

(9) Attention given to shade trees by a committee of Council.

(10) No appropriation but some funds drawn from surplus of other accounts—licenses, etc.

It will be observed that nine commissions were appointed in 1912, that most of the smaller ones are wisely devoting their energies mainly to the trees that they have, and that nearly all want more money.

In addition to the municipalities which have a Shade Tree Commission, Bergenfield, Hawthorne, Lodi, Lyndhurst, Madison and Park Ridge are reported as being almost ready to fall into line.

On the other side must be mentioned cities like Bridgeton, Camden and Trenton which maintain efficient parks, yet do little for their street trees.

Not a few Shade Tree Commissions have come into being because of the ravages of the elm leaf beetle; some have been formed as a forlorn hope when the trees of a community failed without apparent cause. New Jersey is committed to the Shade Tree Commission idea. Under the authority conferred by the law of 1893 and its supplements a community with an active Shade Tree Commission can get things done. Unfortunately the laws have been patched and mended until there is frequent doubt regarding a commission's real status, though practically they are found to serve. As they have been copied by other States and as no better plan has been suggested we have only to strive for improvement in details. It goes without saying that money in reasonable amount must be provided. No good thing can be had for nothing.

#### NEEDED LEGISLATION.

In two respects the laws need to be amended: 1. So that a Shade Tree Commission shall have undoubted authority to expend any part of its appropriation on trees *not* planted by it (Sec. 339). 2. To remove the limitation on the amount that may be raised by a general tax. (Sec. 339). Though neither of these points has given any trouble to the older Shade Tree Commissions doubts or objections have been raised by the legal advisers of several communities. It is probable that a general revision and simplification of the laws will best satisfy all interests. The matter is in the hands of a special committee of the State Shade Tree Federation.





## CO-OPERATION.

The maintenance of shade trees involves active co-operation between the State, the municipality and the property owners. The State's interest is to make its territory good to live in and good to visit, to stimulate activity and to harmonize differences: the municipality stirs civic pride and through the exercise of its police power, enforces what is needful. Individuals by yielding the control over their trees give the work unity and coherence. Evidence of the accomplishment of the Shade Tree Commissions is easy to find in any community where one has been at work. In one town the elms will have been saved by spraying, in another the chief effort will have been directed to planting, in a third settlements have been made with the gas company, in a fourth some other trouble has been overcome. What can be done is indicated in the following report made by the President of the Maywood Shade Tree Commission.

"We have induced the Public Service Electric Light and Telegraph Company to take off from our streets the large unsightly poles which brought the wires right in the crowns of our trees, doing much damage to tree and wire. These poles were replaced by shorter painted poles, each with a horizontal arm under the trees carrying the wires at a height (20 feet above the walk) where the heavy limbs would not sway in the wind and the end of the horizontal bars is used for the street light. We have these poles in our main street under our large silver maple shade trees and experience no trouble in any way, and while there was some kicking at first, everybody is well pleased now and the avenue looks fine and orderly."

## ROADSIDE TREES.

In the revised State highway law passed by the last Legislature, the State Commissioner of Public Roads is authorized to require that any road made with State aid shall be tree bordered and that the Forest Commission shall provide the necessary plans. The same law also provides that the Forest Commission shall decide when differences arise involving roadside trees. It was deemed advisable to make object lessons on State-aid roads rather than seek the enactment and attempt the enforcement of a more general law. Desirable as roadside trees are more will be accomplished by arousing local sentiment in their favor than by striving to establish them against the wish of the communities most concerned. The specifications under which this work will be done are as follows:



## SPECIFICATIONS FOR SHADE TREES ALONG STATE-AID ROADS.

Rows of shade trees consisting of one or more of the following species, to be determined by the State Forester, shall be planted on either side of the said highway: White Elm, Red Oak, White Oak, Scarlet Oak, Pin Oak, Tulip Poplar, Sycamore, Basswood, Sugar Maple, Norway Maple, Red Gum, Ginkgo, Lombardy Poplar. Each tree shall be obtained from a reputable nursery, not less than 2 inches in diameter at  $4\frac{1}{2}$  feet above the ground, well grown, healthy, and with fully developed roots and symmetrical crown.

If native trees of acceptable species shall be found on or near the planting line they may be designated by the State Forester to stand permanently. Such designated trees will take the place of those required to be planted in approximately the same situations.

Holes shall be prepared in advance of the delivery of the trees on lines to be established by the State Road Commissioner and spaced 50 feet apart. Each hole shall be 3 feet in diameter and 2 feet deep. Rich loam, humus, or stable manure shall be provided for a proper bedding of the new trees as may be required by the State Forester.

Each tree shall be set carefully under the direction of the State Forester, and shall be securely fastened to a chestnut or oak stake  $2\frac{1}{2}$  inches in diameter and 8 feet long driven 2 feet into the ground. The fastening by which the tree is secured to the stake shall consist of a length of number 10 galvanized iron wire covered with half-inch rubber tubing.

If in the judgment of the State Forester the safety of any tree requires it, a strong guard made of 3 inch by 1 inch by 6 feet wooden slats according to a design to be furnished shall be placed about it.

All trees planted or designated as a part of the road construction shall be subject to inspection by the State Forester and as required by him shall be pruned, doctored, fertilized or replaced by the township supervisor to the end that the established rows may be maintained in their integrity.

## SHADE TREE TROUBLES.

More and more citizens, more and more communities turn to the Forest Commission for advice when their trees are in trouble. An effort is made to consider every case; frequently the inquirer can be given all necessary information in a letter; often a visit to the locality is made. The difficulties encountered are due most often to neglect, sometimes to insects, occasionally to leaky gas mains or to fungi. Rarely is the trouble so serious that more than a few trees need be lost. Often prompt treatment will save those that are in worst condition.

To the Shade Tree interests of the State the Forest Commission offers a helping hand and the recommendation that ills and dangers *be avoided by anticipation*. Street trees have a hard life at best; whether they thrive or struggle through a brief existence, depends upon the wisdom exercised in their choice, and the extent to which they are guarded, watered and fed. It is especially important to consider the effect upon standing trees of contemplated street improvements. In many old towns it is impossible to make uniform

street grades and straight curb lines without injuring trees. A solution of such difficulties must be sought in compromise, *before, not after*, the street work is begun. And those whose trees have been injured or killed by illuminating gas are recommended to make sure of the facts, and upon them, not upon assumption, to enter *reasonable* claims upon the responsible company. Exorbitant demands will be contested, naturally, but in our experience a loser can always get fair compensation, or a new tree of good size, without resorting to legal action.

#### DROUTH.

The dry weather that last year caused the loss of so many valued trees was less universal this year. Deficiency of rainfall again made some trouble but only where the trees were newly planted or where reasonable care had been long denied. The occurrence of periodical droughts emphasizes the need of systematic care for all valued trees.

#### SHADE TREE BOOK.

Through the generosity of Mr. Charles Lathrop Pack, a member of the Forest Commission, it was made possible to publish in attractive form a revised edition of the series of papers on the Planting and Care of Shade Trees first issued in the Commission's report for 1908. This publication apparently meets an actual need in that it tells what to do when trees are to be planted, when they are injured, when they suffer in any way. The book is still available and will be sent to any citizen who asks for it.

#### ASSISTANCE TO FOREST OWNERS AND OTHERS.

The organization now maintained by the Forest Commission makes it possible to give proper attention to private interests as well as to look after the State forest reserves. Assistance may be asked for by any citizen who wants to develop a forest, to plant a forest, to provide for the proper care of shade trees, or to remedy some ill or danger to shade trees or forests. Advice by mail will be given freely. When the situation warrants or requires an examination a competent forester will be sent to study it and give advice on the ground. For such service individuals are required

to pay only the forester's actual expenses while away from Trenton. His salary is paid by the State. Municipalities and institutions will pay nothing. *No young trees or seeds are furnished by the State.* Special advice and assistance will be given any organized Shade Tree Commission without charge unless extended service is desired. In that case a definite arrangement will be made.

### TREE PESTS.

The number of tree enemies in no wise lessens. Chestnut blight, elm leaf beetle, fake tree-doctors and their kind are still with us. Nevertheless, our tree interests are better off in this respect than they ever have been. The State Plant pathologist appointed last year, Dr. Mel. T. Cook, has his office organized and already has four assistants studying plant diseases and enforcing the laws regarding them. On October 1 a new State Entomologist, Dr. T. J. Headlee, took up his duties as successor to the lamented Dr. John B. Smith. Thus with active officials and adequate laws the State is well provided to hold in check all diseases and insects dangerous to plant life. With these officials the Forest Commission and its foresters are working in complete harmony.

Another factor of great importance is the passage by Congress of a law, as recommended in our report for 1911, authorizing the Secretary of Agriculture to restrict, or to prohibit, the importation into the United States of diseased or insect-infested plants; to prohibit the importation of any or all plants from a country or district known to harbor diseases or insects dangerous to plants, and to control the movement of diseased or infested plants from one State to another. New Jersey needed this law more than most States because so many foreign plants are landed here. Under it the importation of White Pine from certain districts in Germany, where the Blister Rust (See p. 77) is prevalent, is prohibited. An embargo has been placed also on the shipment of Christmas trees from sections of New England infested with brown-tail and gypsy moths.

The present situation with respect to the more serious tree pests is as follows:

## CHESTNUT BLIGHT.

This disease has become so wide-spread and so serious that the whole country is aroused. All efforts to check it have proved unavailing and those who know most about it, the plant pathologists, are agreed that much systematic study is necessary before an effective remedy is likely to be discovered. Meantime the blight *may* run its course or gradually become innocuous.

The State Plant Pathologist has been appointed a member of the Federal Board authorized by Congress to study the disease in all its phases. Of the \$80,000 appropriated for this purpose, a considerable portion has been allotted to this State. A more detailed account of this work will be found in the report of the State Plant Pathologist.

In so far as New Jersey is concerned we are still bearing the brunt of the attack. No infections have been reported from Salem or Cape May counties, but elsewhere the progress of the pest is steadily westward and southward. Whether this progress is more or less rapid than it has been can not be determined; there are some indications that it is slightly more sluggish in its progress and in its virulence. But there is no reason to modify the recommendations heretofore made, namely:

Where trees valuable enough to warrant some expense are concerned it may be worth while to try to prolong their lives by pruning. No assurance can be given that such treatment will prove of more than temporary value, yet as nothing else will avail at all it may be resorted to. Prompt treatment of this kind is recommended in Salem and Cape May counties where the disease has not yet obtained a foothold. Specific directions for such pruning will be sent upon request.

In all other cases, and this applies to practically every body of forest, it will be wisest to convert the trees into timber as soon as the disease appears and allow the young oaks, etc., that may have started under them to fill their places. Where there are large gaps evergreens should be planted. There is not the slightest use anticipating the actual death of any tree for our whole territory is so full of spores that to fell it would have no effect. On the other hand every dead tree should be promptly removed lest it provide breeding places for harmful insects or lodgment for the germs of other diseases. The blight is not known to attack any other species

than chestnut, notwithstanding many published statements to the contrary.

Chestnut wood from trees killed by the blight is as sound and good for ordinary purposes as the wood of trees felled while in health. It is important to see that all lumber or cordwood shipped out of the State, or into the southern counties, is completely barked since it has been learned that the disease may live in unbarked logs or wood for six months or more. Markets for chestnut lumber are still good, though it must be borne in mind that the wood from one or two isolated trees is less valuable than where a large quantity is offered.

#### ELM LEAF BEETLE.

The ravages of this pest have been notably less than for several years past. This is accounted for in part by a much more general resort to spraying and in part by the establishment of a parasitic enemy. True, many trees have died; they were invariably those that have been neglected. We may be so fortunate as to find this pest retreating as it did a dozen years ago, but the time to relax vigilance has not come. *No elm tree need die* of the leaf beetle; timely and careful spraying with arsenate of lead is an infallible remedy. The effect of this treatment can be seen almost anywhere in North Jersey where sprayed trees in perfect health stand beside those dead and dying which have not been sprayed. Specific directions for spraying will be given by the Forest Commission, or by the State Entomologist, though tree owners are recommended to turn first to their local Shade Tree Commission. Apart from other advantages a Shade Tree Commission can have such work done much cheaper than individuals. It may cost anywhere from \$5 to \$20 to spray a single tree; if the owners of 50 or more trees unite the cost may be \$2 or less.

#### BROWN-TAIL MOTH AND GYPSY MOTH.

Neither of these most dangerous insects has been established in the State, and the likelihood that either will be is greatly lessened by the passage of the National quarantine law referred to above. Under it the Secretary of Agriculture has prohibited the shipment from the infested territory of plants, lumber and anything that may carry the pests to new territory. New Jersey is fortunate in having

this Federal law to supplement her own efforts to prevent these pests from getting a foothold in our territory. The New England States are still spending upwards of \$2,000,000 a year in the effort to save some portion of their woodland from ravage.

#### WHITE PINE BLISTER RUST.

No new case of this disease has been discovered in the State, and though we are still going slowly in planting white pine there is now a reasonable assurance that the disease will not become established. Nevertheless, there is a danger and on that account it is advisable always to use only a small proportion of white pine in any forest planting. Owners of pine plantations may be assured that the disease attacks only pine trees with five needles, never those with two or three needles, in a sheath. As the disease is of foreign origin, planters are especially warned against buying imported material. A guarantee amounts to nothing, and State or National inspection may fail, as in its earlier stages the disease is very obscure.

#### HICKORY BARK BEETLE.

Numerous instances of damage done by this insect have been reported, though in practically every case an examination has shown that the affected trees were weakened by fire, lack of food, or in some other way made unable to offer a normal resistance to the attack of the insects. There is no evidence that the hickory trees in our territory are likely to be exterminated or even to be greatly damaged.

For the benefit of those who have been alarmed, or may be otherwise interested, it can be stated that the pest manifests itself by small openings in the bark of the stem, from which refuse like sawdust is often extruded. If a tree has many of these "shot holes" cut it down and burn the wood at once as it cannot recover and its preservation simply gives the insects a chance to multiply and spread to other trees. If the attack is on the twigs only, causing them to wilt or break off, let all affected twigs be cut off with a tree pruner and burned. After such treatment a tree will ordinarily revive. On small trees it is sometimes possible to follow up the insects in their burrows with a wire or to kill them by injecting carbon di-sulphide. Ordinarily, however, neither of these means is practicable. In all

instances where the beginning of an attack is observed, or before one is observed, let the trees be well nourished and watered.

#### OTHER INSECTS.

The list of insects that do serious harm to trees in this State is short. During the late summer patches of oaks in South Jersey, sometimes of considerable size, were completely defoliated by the *striped oak worm*. Insofar as the attack was confined to scrub oak, and that seems to be the creatures' preference, it was decidedly beneficial. Some tree oaks of many species were also injured, yet no great harm was done. The worm is one that is constantly with us but is held in check by its natural enemies.

In the same section, and in some plantations in the North, two and three needle pines were defoliated by the larvae of a *saw-fly*. In plantations a permanent injury is sometimes done, in the natural forest there is little to be feared.

Any type of insect like the two described can be easily controlled where trees are valuable enough to justify spraying. Arsenate of lead as for the elm leaf beetle is best for any deciduous tree. Evergreens may be treated in the same way, though the mixture should be not more than one-third as strong. A better remedy for the latter is a spray composed of one pound of whale-oil soap and one half pound of arsenate of lead in six gallons of water.

Locally the *cottony maple scale*, the *maple pseudococcus*, and the *tussock moth* have injured shade trees, usually in consequence of previous weakening. Remedies for any of these will be found in our Shade Tree book. (See p. 73.)

#### TREE DOCTORS—WARNING.

Once more a warning against fake tree doctors must be published. One or two of these men have been driven from the State, but several are still preying upon tree owners. The fact that many trees need spraying or filling, that many chestnuts are dead of the blight and must be removed, that it is becoming the fashion to do something to one's shade trees, induces property owners to listen to these men. Do not trust your tree work to the first man that comes along, but seek a reputable workman. No chestnut tree can be cured of the blight. A wound badly filled, or unnecessarily filled, would

be better left open, and a tree that is sprayed carelessly or with wrong material will be benefited as much as, and no more than, one that is butchered under the pretense of being pruned. It is a sheer waste of money to pay unknown men for work of this kind. And if dead trees are to be sold it is well to remember that the wood is not useless but usually has a value greater than is represented by the cost of removing it. Tree owners and forest owners are warned against men without credentials. Those who have work of this kind to do are advised to seek assistance of the local Shade Tree Commission, of the Forest Commission, of the State Entomologist or of the State Plant Pathologist. All have knowledge of reputable parties.



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